フィリピン共和国
小児呼吸器感染症の病因解析・疫学に基づく予防・制御に関する研究プロジェクト
中間レビュー調査報告書

平成26年9月
（2014年）

独立行政法人国際協力機構
人間開発部

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序　　文

途上国において、肺炎をはじめとする呼吸器感染症は小児の死亡原因の 25%以上を占めており、世界中で毎年約 200 万人の小児が命を落としていると推計されています。肺炎は、ミレニアム開発目標の 1 つである「2015 年までに 5 歳未満児の死亡率を 1990 年の水準の 3 分の 2 に削減」を達成するためには、取り組まなくてはならない重要な課題ですが、感染等の実態はまだ十分に明らかになってはいません。フィリピン共和国においても、「小児呼吸器感染症の病因解析・疫学に基づく予防・制御に関する研究プロジェクト」が始まった 2011 年、5 歳未満児死亡率は 1,000 出生当たり 31（2015 年の目標は 26.7）で、肺炎が乳幼児の最大の死亡原因となっています。

こうした状況のなか、本プロジェクトはフィリピン共和国政府からの要請を受けて、2010 年 8 月に詳細計画策定調査を実施し、カウンターパート機関であるフィリピン熱帯医学研究所他と協力内容について協議を行いました。その結果、東北大学とフィリピン熱帯医学研究所等が協同して、小児肺炎に起因する死亡率低下を目的として、①小児肺炎・呼吸器感染症の病因の測定、②小児肺炎の疾病負荷の測定、③小児の重症肺炎のリスク因子の同定、④小児肺炎による死亡を減少させるための介入検討を行う技術協力プロジェクトとして、2011 年 4 月 1 日から 2015 年 3 月 31 日までの 5 年間実施しています。

今般、本プロジェクトの活動が約 2 年 6 カ月を経過したことから、本プロジェクトの進捗状況を確認し、中間時点での目標達成度、成果等を分析するとともに、プロジェクトの残り期間の課題及び今後の方向性について確認し、更に同結果を Mid-Term Review Report として取りまとめ、フィリピン共和国側関係機関と協議し、合意することを目的とする中間レビュー調査団を派遣しました。

本調査には独立行政法人科学技術振興機構関係者にもご参加いただき、研究の進捗状況や成果の確認及び科学技術的視点からの評価を行っていただきました。

本報告書は同調査の結果を取りまとめたものであり、今後のプロジェクトの実施にあたり広く活用されることを期待しております。

最後に、本調査にご協力いただいた内外の関係者の方々に対し、心から感謝の意を表明します。

平成 26 年 9 月

独立行政法人国際協力機構
人間開発部長　戸田　隆夫

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略　語　表

略　語	正式名称	日本語
AFTM	Asian Foundation for Tropical Medicine	アジア熱帯医学財団
ARI	Acute Respiratory Infection	急性呼吸器感染症
BPH	Biliran Provincial Hospital	ビリラン州立病院
CARI	Control of Acute Respiratory Illness	国家急性呼吸器感染症対策
CHD	Center for Health Department	保健省地方事務局
DOH	Department of Health	保健省
EVRMC	Eastern Visayas Regional Medical Center	東ビサヤ地域医療センター
IMCI	Integrated Management of Childhood Illness	小児疾患統合管理
IRB	Institutional Review Board	審査委員会
JCC	Joint Coordinating Committee	合同調整委員会
JICA	Japan International Cooperation Agency	独立行政法人国際協力機構
JST	Japan Science Technology Agency	独立行政法人科学技術振興機構
M/M	Minutes of Meeting	協議議事録
MDGs	Millennium Development Goals	ミレニアム開発目標
MOA	Memorandum of Agreement	合意覚書
ODA	Official Development Assistance	政府開発援助
ONP	Ospital ng Palawan	パラワン病院
PCM	Project Cycle Management	プロジェクト・サイクル・マネジメント
PCR	Polymerase Chain Reaction	ポリメラーゼ連鎖反応
PDM	Project Design Matrix	プロジェクト・デザイン・マトリックス
PO	Plan of Operations	活動計画
R/D	Record of Discussions	討議議事録
RHU	Rural Health Unit	町保健所
RITM	Research Institute for Tropical Medicine	フィリピン熱帯医学研究所
SATREPS	Science and Technology Research Partnership for Sustainable Development	地球規模課題対応国際科学技術協力事業
UNICEF	United Nations Children's Fund	国連児童基金
WHO	World Health Organization	世界保健機関

評価調査結果要約表

１．案件の概要		
国名：フィリピン共和国		案件名：小児呼吸器感染症の病因解析・疫学に基づく予防・制御に関する研究プロジェクト
分野：保健医療		援助形態：技術協力プロジェクト（SATREPS）
所轄部署：人間開発部 保健第二グループ保健第三課		協力金額：4.1 億円
協力期間	（R/D）： 2011 年 4 月 1 日～ 2015 年 3 月 31 日	先方関係機関：保健省–熱帯医学研究所（RITM）
		日本側協力機関：東北大学大学院医学系研究科
		他の関連協力：青年海外協力隊（ビリラン）

１－１　協力の背景と概要

肺炎を中心とする重症呼吸器感染症は途上国において小児の死亡原因の 25～30%を占める深刻な問題であり、国連ミレニアム開発目標（Millennium Development Goals：MDGs）のゴール 4 に掲げられている「2015 年までに 5 歳未満児の死亡率を 1990 年の水準の 3 分の 1 に削減する」を達成するための重要課題の 1 つである。しかし、ウイルス感染を含めたその実態はいまだに明らかになっておらず、さまざまな努力にもかかわらず今も世界中で約 200 万人の小児が肺炎により毎年死亡していると推計されており、小児の肺炎の 95%が途上国において発生している。

かかる状況の下、フィリピン共和国（以下、「フィリピン」と記す）より地球規模課題対応国際科学技術協力事業（Science and Technology Research Partnership for Sustainable Development：SATREPS）として「小児急性肺炎を対象とした包括的疫病学調査プロジェクト」が要請され、これと並行して国内研究協力機関である東北大学大学院医学系研究科より独立行政法人科学技術振興機構（Japan Science Technology Agency：JST）に対し研究申請が行われた。これを受け、同事業に携わる文部科学省、JST、外務省、JICA の 4 機関が審査を行った結果、「小児呼吸器感染症の病因解析・疫学に基づく予防・制御に関する研究プロジェクト」（以下、「本プロジェクト」と記す）が 2011 年 4 月から 2016 年 3 月までの 5 年間を協力期間として採択された。

本プロジェクトは、プロジェクトが開始された 2011 年でも 5 歳未満児死亡率が出生 1,000 当たり 31 と依然として高く、肺炎が乳幼児の死亡原因の第 1 位を占めるフィリピンにおいて、同国の実施機関であるフィリピン熱帯医学研究所（Research Institute for Tropical Medicine：RITM）とわが国の東北大学が協働して、フィリピンにおける小児肺炎の病因・疫学の全体像の解明、小児肺炎の重症化因子の詳細な解析、及びそれに基づいた効果的な治療・予防策の検討を行うことを目的として実施している。

１－２　協力内容

(1) 上位目標

小児肺炎に起因する死亡率の低下

(2) プロジェクト目標

小児肺炎の病因、疾病負担、リスク要因が明らかになり、小児肺炎による死亡を低減させるための有効な介入が確認される。

(3) 成果

1) 選定されたサイトで小児肺炎・呼吸器感染症の病因が測定される。
2) 選定されたサイトで小児肺炎による疾病負担が測定される。
3) 小児の重症肺炎のリスク要因が同定される。
4) 小児肺炎による死亡を減少させるための介入が評価される。
5) 小児肺炎対策戦略の改善・刷新のため、研究成果が発表される。

(4) 投入（評価時点）

1) 日本側

・専門家派遣：JICA 専門家：延べ 3 名（業務調整）（2011 年 9 月 26 日～2013 年 2 月 7 日、2013 年 2 月 12 日～2013 年 6 月 11 日、2013 年 6 月 2 日～2015 年 6 月 1 日)、その他の専門家（研究者）：延べ 34 名〔うち、6 名は JST 経費負担（2011 年 4 月～2011 年 6 月)〕
・機材供与：総額（円）：約 1.14 億円、内容：血液酸素飽和度測定器、血圧計、電子体温計、聴診器、検耳鏡等の医療機器。リアルタイム PCR システム、サーマルサイクラー、凍結乾燥機、安全キャビネット、オートクレーブ、CO_2 インキュベーター、ディープフリーザー等の研究関連機器。実験試薬、図書、PC、他
・研修員受入：疫学に関する研究、非定型肺炎の診断方法、呼吸器感染症起因ウイルス分離方法等に計 4 名を派遣
・在外事業強化費：34,590 千円（2011 年 4 月～2013 年 3 月末まで）
・その他：検査及びフィールド活動スタッフ雇用：48 名（51,133 千円）（2011 年 4 月～2013 年 3 月末まで）

2) フィリピン側

・カウンターパート（Counterpart：C/P）の配置：合計 20 名〔RITM より 17 名、東ビサヤ地域医療センター（Eastern Visayas Regional Medical Center：EVRMC)、ビリラン州立病院（Biliran Provincial Hospital：BPH)、パラワン病院（Ospital ng Palawan：ONP）より各 1 名〕
・RITM 内事務スペース及び倉庫
・RITM 内研究スペース（微生物学ラボ、ウイルス学ラボ及び分子生物学ラボ）
・EVRMC、BPH 及び ONP 内プロジェクト専用検査室スペース
・安全キャビネット、インキュベーター、撹拌機、循環流動層焼却炉等、研究に必要な既存の機器類
・水道光熱費（金額算定不能）

２．評価調査団の概要

調査者	担当分野	氏　名	所　属
	団長・総括	牧本　小枝	JICA 人間開発部 保健第二グループ保健第三課 課長
	協力企画	阿部　将典	JICA 人間開発部 保健第二グループ保健第三課 職員
	評価分析	井上　洋一	（株）日本開発サービス 調査部 主任研究員
	感染症対策	倉田　毅	SATREPS　JST 研究主幹 （国際医療福祉大学 塩谷病院　教授)（オブザーバー）
	計画・評価	佐藤　雅之	JST 地球規模課題国際協力室　上席主任調査員 （オブザーバー）

調査期間	2013 年 9 月 10 日～9 月 25 日	評価種類：中間レビュー

３．評価結果の概要

３－１　実績の確認

(1) 成果 1

病因研究における検査体制については、一般血液検査、細菌培養検査はセンチネル・サイトの検査室で行い、同時に検体を RITM に輸送しウイルス検査を行えるようにフィリピン国内のネットワークが構築され、中間レビューまでに検体採取から輸送、ラボでの解析、データの分析等の一連のシステムが確立したことが確認された。

RITM においてはウイルス学的検査によって原因ウイルスの分析が進んでいるが、RITM を含む 4 つの拠点での細菌学的分析について、各サイトで細胞培養検査を実施している。しかしながら、これまで培養を行うための CO_2 インキュベーター等の研究機器や設備の安定した電源を確保するためのジェネレーター設置の遅延があり、停電の多い地方サイトでの細菌学的検査の本格稼働が大きく遅れた。参考としての細菌学的分析[1]結果では百日咳菌 PCR 法により検出されているものの、全体的に細菌培養の陽性率は低い。これは、約 40%の患児が何らかの理由により入院前の抗生物質の投与を受けており、採取された血液中からの細菌培養の陽性率に一定の影響を及ぼしている可能性が明らかとなった。他方、ウイルス学的検査では、臨床的に肺炎と診断された患児の呼吸器検体から RS ウイルスが約 30%検出されている。このことから、中間レビューまでに、フィリピンにおける小児肺炎の原因として RS ウイルスを中心としたウイルス感染の重要性が強く示唆されたとの知見が得られている。

(2) 成果 2

中間レビュー時点では、疾病負荷研究サイトをビリラン州に絞り、そこでの小児肺炎の死亡率に及ぼすインパクトを低下させる介入研究を視野に入れたフィールド調査が進行中である。2012 年の迅速調査の結果では、肺炎による死亡への寄与は限定的であったが、逆に重症肺炎の発生率が高いことが明らかとなった。

コホート調査による疾病負荷研究は迅速世帯調査を踏まえて実施されることが想定されていたが、引き続いて実施されるコホート研究の実施が遅延している。プロトコル作成に係る関係者間の協議や、審査委員会（Institutional Review Board : IRB）による倫理審査、コホート研究実施に必要な合意覚書（Memorandum of Agreement : MOA）の締結にも一定の時間を要したが、中間レビュー時点では、これまで得られている病因分析結果及び迅速調査の結果を踏まえてコホート調査の実施プロトコルが作成されている。

(3) 成果 3

上述した要因によりコホート調査の開始が大きく遅延したことから、中間レビュー時点で十分なエビデンスを有する小児重症肺炎のリスク要因の同定には至っていないものの、死亡例の患者情報解析など予備的な解析は既に開始されている。プロジェクトでは残りのプロジェクト期間を考慮し、これまで得られている病因分析や迅速調査の分析結果を基に、

[1] 培養のための CO_2 インキュベーターが停電により室温培養となっている可能性が否定できず、信頼性を担保できないことから、現在まで得られている細菌学的検査結果は参考情報としてのみ使用される。

コホート調査を準備している。

(4) 成果 4

2012 年に実施された地域での迅速世帯調査の結果から、地域の小児肺炎リスク及び受診行動の概要をつかんだ。また、プロジェクトはコホートの開始前に一斉世帯調査（センサス）を実施するとともに、地域の一次保健システムの状況を多角的に評価した。

プロジェクトでは、現在の進捗状況、残りのプロジェクト期間を考慮し、上述した分析結果を基礎的なデザインのためのデータとして利用し、2014 年中の介入研究開始に向けてプロジェクトチームで調査デザインが開始されている。介入効果をより精度高く測定するためには、介入期間を少なくとも肺炎流行 2 シーズン確保することが必要であることから、プロジェクトは、現在の介入研究のデザインをコホート調査の結果を随時解析することにより微調整し、できるだけ早い介入研究の実施をめざしている。

(5) 成果 5

以下に示す指標の達成度のとおり、研究成果の共有のための年次報告会、対象サイトでのフィードバックフォーラムも開催されている。また、これまでの研究成果も国際誌に 2 件発表し、国内外の学会発表もなされている。今後も、コホート調査や介入研究の結果を基に、多くの学術論文の発表や学会発表も期待される。

(6) プロジェクト目標

「成果の達成度」で示したとおり、これまでにセンチネル・サイトで得られた小児肺炎患者からのウイルス同定及び遺伝子学的解析結果等の個別のエビデンスが得られているものの、プロジェクト全体の進捗としては約 1 年の遅延が確認されている。これに伴い、本プロジェクトで最も重要なエビデンスに基づいた介入研究に関してもプロジェクト期間内で確保できる介入期間が制限される可能性が高い状況である。

これに対してプロジェクトは、より効率的な研究活動に向けて中間レビュー以降のプロジェクト活動計画を練り直し、プロジェクト期間内にできるだけ高いエビデンスを得るために取り組みを強化している段階である。

３－２　評価結果の要約

(1) 妥当性

中間レビュー時点でのプロジェクトの有効性は中程度である。

2008 年 12 月に実施された事前評価で確認されたフィリピン保健政策及びターゲットグループのニーズ、わが国の援助方針とプロジェクト目標の一致性に関して、本プロジェクトの妥当性を損ねるような政策の変更やニーズの変化等は認められず、その一致性は中間レビュー時点においても維持されている。

(2) 有効性

終了時評価時点でのプロジェクトの有効性はおおむね高いと考えられるが、有効性維持のためのメカニズムをより強化する必要がある。

ウイルス学的病因研究はおおむね順調に進捗しており、いくつかのエビデンスも得られているが、検査施設環境整備の遅れにより、細菌学的研究は参考情報としてのいくつかの知見は得られているものの、詳細な研究は十分に実施できていない状況である。また、フィリピン側倫理委員会の承認手続きに一定の時間を要したことから、中間レビュー時点において当初予定から全体的に 1 年程度の遅延が発生していることから、コミュニティでの小児肺炎のリスク要因分析と、分析結果に基づいた介入方法の決定等、中間レビュー時点で予定された研究成果は得られていない。しかしながら、病因研究や迅速調査等で対象地域での肺炎の原因病原体やリスク要因の概要はおおむね把握できている。中間レビュー以降、直ちにコホート調査が開始される予定であるが、プロジェクトはコホート調査と並行して前述の調査結果等に基づいて介入方法の具体的な検討を開始し、コホート調査の結果を随時確認しながら介入方法の最終化を行うことで、残りのプロジェクト期間で得られるエビデンスレベルを損なわないよう効率的な活動の実施を計画している。

C/P への技術移転に関しては、これまでに多くの研究・診断技術が移転され、中間レビュー時点で移転された技術を自立的に維持できるレベルに到達している。特に、ウイルス学的検査技術に関して、hMPV や C 型インフルエンザウイルス、EV68 がフィリピンで初めて分離されたなど、国家リファレンスラボ機能向上との側面でも技術移転の成果が確認されている。細菌学的検査についても、プロジェクトは 2 つのセンチネル・サイトで非定型の細菌検出のための分子診断技術を促進・支援してきた。疫学的解析技術に関しても、空間解析技術など高度な疫学分析が可能となっている。

(3) 効率性

いくつかの内外の要因により研究活動の円滑な実施に負の影響が生じたため、プロジェクトの効率性は中程度である。

業務調整員の赴任がプロジェクト開始後 5 カ月後となり、プロジェクトによるスタッフ雇用プロセスが遅れたことや、地方サイトにおける停電対策用ジェネレーター配線工事の遅れ、プロジェクト内でのフィールド調査デザイン/内容にかかわる協議、施設内倫理委員会からの研究承認、研究実施にかかわる MOA 署名等の影響により、中間レビュー時点においてプロジェクトの研究活動がおおむね 1 年遅延している。それぞれの問題が生じた段階では適宜関係者間で対応策について協議されており、研究成果や進捗に関する関係者間の情報交換は定期的に行われたことから、進捗のモニタリングとしてはおおむね適切に実施されてきたと考えられる。しかしながら、結果的に中間レビュー時点でプロジェクト活動の大きな遅れが生じていることから、プロジェクトだけでなく JICA 等の外部関係者も交えて遅延回避に向けたより強力な対応をタイムリーに実施する必要があったものと考えられる。

「有効性」の項で示したとおり、プロジェクトでは可能な限りエビデンスレベルを損なわないよう中間レビュー以降の研究活動の実施計画の変更を検討している。それに伴い、いくつかの研究要素がオーバーラップして実施され、人員や予算の配分を変更する必要性もあることから、より綿密なプロジェクト活動の工程管理が求められる。

(4) インパクト

プロジェクトの実施によって､以下に示す正のインパクトが確認または期待されている。

本プロジェクトは､｢小児肺炎に起因する死亡率の低下｣を上位目標として設定している。この実現のためには、本プロジェクトで小児肺炎による死亡率を低下させるための有効な介入が確認され、それが保健省（Department of Health：DOH）によってフィリピンの感染症対策に活用されることが必要である。しかしながら、中間レビュー時点ではコホート調査が始まるところであり､介入研究の実施はプロジェクトの終盤に予定されている。また、プロジェクトで提示する介入が保健省に採用されるか否かについては、それがどの程度のエビデンスレベルを有し、かつ、実現可能性のあるものであるかに依存するものである。

他方、フィリピンの小児肺炎におけるウイルス感染症の重要性など、これまでにも小児肺炎に対する科学的知見は既に得られている。プロジェクトの目標としては肺炎の重要化を抑制する介入のエビデンスを得ることが達成指標として想定されるが、コホート調査や介入研究で得られるデータセットは多角的な分析を行うことによって、多くの個別のエビデンスがプロジェクト期間終了後まで得られることが期待できる。

(5) 持続性

プロジェクトによって生み出された便益の自立発展、自己展開は中間レビュー時点においても一定程度見込まれる。

本プロジェクトではその目標として小児肺炎による死亡を低下させるための有効な介入に関するエビデンスを得ることである。この成果を基に、本プロジェクトは将来的に実際の小児肺炎に起因する死亡率の低下を上位目標として設定している。このためには、本プロジェクトで得られた介入方法が実際にフィリピンの小児肺炎対策に取り入れられることが必要である。当然、対策として取り入れられるためには、得られた成果（介入）の有効性や実現可能性がどの程度であるかに左右される。したがって､プロジェクト期間終了後、成果をどのように活用していくか、プロジェクトは保健省等の関係機関と協議を開始するとともに、実際に特定の介入方法を導入することとなった場合を念頭において、保健省等に提示する改善介入パッケージには介入の運用ガイドだけでなく、必要な資機材や人員等のコスト分析等も含められることが望ましい。

技術的持続性の観点では、RITM は原因病原体の分離、同定の技術は既に獲得している。これに加えて、RITM はコホート調査などのフィールド調査のノウハウ、経験を既に有している。中間レビュー以降はコホート調査と介入研究が予定されており、これらの調査活動を通じて RITM、JICA 専門家（研究者）の技術は一層強化されることが見込まれる。

３－３　効果発現に貢献した要因

(1) 計画内容に関すること

計画内容に関するプロジェクトの促進要因は終了時評価時点までに確認されていない。

(2) 実施プロセスに関すること

プロジェクト雇用スタッフによる迅速世帯調査やセンサスの実施の際に、町保健所（Rural Health Unit：RHU）は管轄地域の世帯情報を提供したり、遠隔地域でもインタビュ

一調査に同行したりとフィールド活動の実施に協力しており、正確かつ迅速な調査の実施に大きく貢献したことから､本プロジェクトの効率性に対する促進要因として整理される。

３－４　問題点及び問題を惹起した要因

(1) 計画内容に関すること

計画内容に関するプロジェクトの有効性の促進要因は終了時評価時点までに確認されていない。

(2) 実施プロセスに関すること

これまで示してきたような内外の遅延要因は、プロジェクトの円滑な実施や成果創出に大きな負の影響を及ぼしており、効率性に対する阻害要因として整理される。

３－５　結論

これまでに原因病原体の分離、同定など高度な診断技術が RITM へ移転されており、フィリピンの小児肺炎におけるウイルス感染症の重要性など、小児肺炎に対する科学的知見は既に得られている。今後予定されているコホート調査や介入研究で得られるデータセットは多角的な分析を行うことによって、多くの個別のエビデンスがプロジェクト期間終了後まで得られることが期待できる。

しかしながら、病因研究やコミュニティレベルでの疾病負荷、肺炎重症化のリスク要因分析は約 1 年の遅延が確認されており、これに伴い、エビデンスに基づいた介入研究に関してもプロジェクト期間内で確保できる介入期間が制限される可能性が高く、プロジェクトの目標である肺炎の重要化を抑制する介入のエビデンスを得ることが達成できるかを現時点で予測することは難しい。

残り期間内で所定の目標を達成するためには、段階を追って進める予定であった研究を一定程度同時並行的に行うよう詳細計画を見直し、関係者間での協力による入念な準備を開始するとともに、問題事項への対処を関係者で協力して取り組む進捗管理が必要である。また、データの解析をフィリピン・日本国側双方の研究者の共同作業により行うことにより双方の能力を高め、フィリピン保健省や WHO、UNICEF などの関連ドナーにしっかり発信していくことが重要である。

３－６　提言（当該プロジェクトに関する具体的な措置、提案、助言）

- プロジェクト、ONP、JICA は、ONP の細菌検査結果が科学的根拠として使えるようにするために、ジェネレーター配線工事を一刻も早く完了すべきである。
- 病因研究における細菌検査の今後の方向性について、ワーキンググループ A（病因研究）を中心に、プロジェクトは予算の制約等を考慮しながら、取り組みの度合いを検討すべきである。
- プロジェクトは保健省等に対して、介入方法のみならず、モニタリング方法、必要な資機材、コストも含めた、実現可能性を含めた形で介入パッケージを提示すべきである。
- プロジェクトは、介入研究のアプローチを検討するにあたり、想定されている介入にかかわっている関係者からより積極的に情報収集し、決定にあたり、保健省と十分協議すべき

である。JICA は、母子保健事業の関係者等との意見交換を促進すべきである。

・プロジェクトは、2 カ年にわたる各年の肺炎流行シーズンをとらえた介入研究をいち早く行う以下の対応を行うべきである。

－より詳細な工程表の作成（2013 年 10 月まで）

－関係者への工程表の共有と実施

－コホート調査の迅速な実施

－コホート調査を踏まえた介入研究デザインの必要に応じた見直し

・プロジェクトは投入の適切な配分について、研究活動の優先性や JICA 専門家の業務内容等に考慮し検討すべきである。

・RITM はフィリピン側関係者及び JICA 専門家らと協議のうえ、プロジェクト終了後の RITM 及びセンチネル・サイトへ供与した機材の活用について、2014 年 3 月までに計画すべきである。

・プロジェクトは調査団が提案した PDM 改訂案について、プロジェクトの残りの期間の活動工程が決定次第､改訂し､2014 年 4 月頃に予定されている JCC で承認を得るべきである。

３－７　教訓（当該プロジェクトから導き出された他の類似プロジェクトの発掘・形成、実施、運営管理に参考となる事柄）

・本プロジェクトのデザインは、病因研究（成果 1）と疾病負荷研究（成果 2）をインタラクティブに並行実施し、それらの結果を用いて重症化因子を同定し（成果 3)、介入研究の実施（成果 4）とつながっていくものである。したがって、ある過程に遅延が生じた場合は、全体的なプロジェクトの進捗にも影響が及ぼされるものである。特定の活動に遅延が生じた際にはプロジェクトは各問題について JICA を含む関係機関と適宜対策について協議を行ってきたが、結果として中間レビューで約 1 年の遅延を生じる結果となった。

このように、プロジェクト目標達成に向けて成果が直列的につながっているようなプロジェクトデザインとなっている場合は、プロジェクト活動で 1 つの過程が滞ったことにより全体の進捗が阻害される可能性があるため、大きな遅延が危惧された場合は、問題解決に向けてできるだけ早い対応を行う必要がある。

・機材供与や検査室設置にあたり工事が発生する場合など、研究者・業務調整員・JICA 事務所では対応できない技術的な事項があるので、日本人コンサルタントを設計段階で派遣し問題を事前に確認するなどすることが必要である。

Evaluation Summary

<table>
<tr><td colspan="3">1. Outline of the Project</td></tr>
<tr><td colspan="2">Country: The Republic of Philippines</td><td>Project Title: The Project for Comprehensive Etiological and Epidemiological Study on Acute Respiratory Infections in Children: Providing Evidence for the Prevention and Control of Childhood Pneumonia in the Philippines</td></tr>
<tr><td colspan="2">Issue/Sector: Healthcare and medical treatment</td><td>Cooperation Scheme: Technical Cooperation Project under the scheme of SATREPS</td></tr>
<tr><td colspan="2">Division in charge : Deputy Director, Health Division 3, Health Group 2, Human Development Department</td><td>Total Cost : 410,000,000 JPY</td></tr>
<tr><td rowspan="3">Period of Cooperation</td><td rowspan="3">(R/D):
1/Apr/2011-
31/Mar/2015</td><td>Partner Country’s Implementing Organization: Research Institute for Tropical Medicine (RITM), the Department of Health</td></tr>
<tr><td>Supporting Organization in Japan: Tohoku University Graduate School of Medicine</td></tr>
<tr><td>Other Related Projects: Japan Overseas Cooperation Volunteers (in Biliran)</td></tr>
</table>

1-1. Background of the Project

Severe respiratory infections such as pneumonia are raging in developing countries and account of e 25 to 30 percent deaths in children. At the same time, it closely related one of the Millennium Development Goals, “Reduce by two thirds, between 1990 and 2015, the under-five mortality rate”. Actually, it is estimated that about 2 million children die each year due to pneumonia in the world and 95 percent of it happen mainly in developing countries. Even though, actual situation especially virus infection is not so clear.

Under the circumstances, the republic of the Philippines (herein after referred to as “Philippines”) officially request to Japan as technical cooperation project under the scheme of the Science and Technology Research Partnership for Sustainable Development (SATREPS) titled “The Project for Comprehensive Etiological and Epidemiological Study on Acute Respiratory Infections in Children: Providing Evidence for the Prevention and Control of Childhood Pneumonia in the Philippines” (hereinafter referred to as “the Project”) and Tohoku University Graduate School of Medicine (hereinafter referred to as “Tohoku University”) also submitted the research proposal to the Japan Science Technology Agency (herein after referred to as “JST”). As a result of discussion between the Ministry of Education, Culture, Sports, Science and Technology, the Ministry of Foreign Affairs, the JST and the Japan International Cooperation Agency (referred to as “JICA”); it adopted the proposal officially and determined to start the five-year Project from April 2011 to Mach 2016.

The Project is jointly conducted by the Research Institute for Tropical Medicine (hereinafter referred to as “RITM”) and Tohoku University to analyze the childhood pneumonia in the Philippines through etiological studies, disease burden studies, risk factor analysis and present the effective treatment and prevention by intervention studies. The Project mainly conducted in the fields in the Philippines where under five mortality ratio is still highly suspended in 31 per 1,000 live births in the year when the Project had commenced (2011), and pneumonia is top ranked as a death cause in children.

1-2. Project Overview

(1) Overall Goal
Reduction of mortality due to childhood pneumonia.

(2) Project Purpose
Etiology, disease burden and risk factors of childhood pneumonia are defined and effective interventions to reduce mortality due to pneumonia in children are validated.

(3) Outputs
1) Etiology of childhood pneumonia and respiratory infections in the selected sites is determined.
2) Disease burden due to childhood pneumonia is measured in the selected sites.
3) Risk factors for severe pneumonia in children are identified.

4) Interventions to reduce mortality due to childhood pneumonia are evaluated.
5) Study results are presented for modifying/updating strategies for the control of childhood pneumonia.

(4) Input (as of the evaluation)

Japanese Side:

- Dispatch of Experts: JICA Experts: a total of three (3) Project Coordinator (2011/09/26-2013/02/07, 2013/02/12-2013/06/11, 2013/06/02-2015/06/01), Other Experts (researchers): 34 Experts
- Provided Equipment: Total: Approx. JPY 114 million (≒ USD 1.16 million / PHP 251 million), Medical apparatus such as Pulse Oximater, Blood pressure monitors, electronic thermometers, stethoscopes and Otoscopes.
- Training in Japan: A total of 4 personnel for 'Isolation of Respiratory Viruses', 'Diagnosis of atypical pneumonia', 'Epidemiological Analysis with Field Data' and 'Data Analaysis on Disease Burden Study'.
- Overseas activities costs: Sum total for overseas activities costs: JPY 34,590,000 (≒ USD 352,815 / PHP15,723,000) (April, 2011-End of March, 2013)
- Others: Hiring costs for laboratory and field staffs (48 persons in total): JPY51,133,000(≒ USD521,552 / PHP23,242,272) (April, 2011- End of March, 2013)

Philippine Side:

- Allocation of Counterparts: a total of 20 personnel (17 from RITM, 1 each from EVRCM, BPH and ONP)
- Office space & warehouse in RITM
- Research space at RITM (Microbiology, Virology, Molecular biology)
- Laboratory space exclusively for the Project at EVRMC, BPH and ONP
- Existing equipment for research activities such as Biosafety cabinet, Incubator, Refrigerator, Vortex Mixer, Loop incinerator
- Utility Costs Approx.: paid by Philippine side, but amount exclusive for the Project is not available.

2. **Mid-term Review Team**

Members	Ms.Saeda MAKIMOTO	Leader	Director, Health Division 3, Health Group 2, Human Development Department, JICA
	Mr. Masanori ABE	Cooperation Planning	Program Officer, Health Division 3, Health Group 2, Human Development Department, JICA
	Dr. Yoichi INOUE	Evaluation Analysis	Senior Consultant, Consulting Division, Japan Development Service Co., Ltd.
	Prof. Takeshi KURATA	Infectious Disease Control	Program Officer of JST - SATREPS Professor, International University of Health and Welfare, Shioya Hospital (Observer)
	Mr. Masayuki SATO	Planning and Evaluation	Principal Researcher, Research Partnership for Sustainable Development Division, JST (Observer)
Period of Evaluation	10/Sep/2013-25/Sep/2013		Study Type: Mid-term Review

3. **Summary of Evaluation Results**

3-1. Achievements

(1) Output 1

In the etiological studies, the Project established the mechanism which the laboratories in each sentinel site conduct general blood tests and bacteria culture and they transfer the samples to RITM for virological testing; it is confirmed that a series of etiological research system (sample collection, transfer, laboratory testing and analysis) is established by the time of the Mid-term Review.

In the etiological studies, analysis of causative virus for childhood pneumonia has been done in RITM and bacteriological test has been done in four sentinel sites including RITM. However, installation of some generators for a stable electrical provision to laboratory instrument and equipment such as the CO_2 incubators in BPH and ONP has been delayed so that the bacteriological tests in these two sites has also delayed as planned. The Project found out that the positive rate of bacterial culture wasn't so high though the *Bordetella Pertussis* was detected using the PCR method as a result of bacteriological analysis. The Project concluded that about 40 percent among the child

patients had received antibiotics prior to admission, which might affect the detection of bacteria by culture from the samples. Even though the Project conducted the bacteriological identification to selected samples using PCR method to increase the detection rate, there are only a few percent of them were positive for bacteria in the blood by PCR. Meanwhile, the Project identified RS virus in approx. 30% of respiratory samples from pediatric patients with clinical diagnosis. From this finding of the Project, the significance of viral infection (esp. RS virus) is strongly suggested as one of cause of childhood pneumonia in the Philippines.

(2) Output 2

In light of upcoming intervention study to reduce the impact of childhood pneumonia, the Project has selected the Biliran province as the target site of disease burden study, and proceeding field surveys as of the time of the Mid-term Review. The results from the rapid household survey in 2012 showed that contribution of pneumonia to mortality is rather limited whereas the incidence of the severe pneumonia as high in the Biliran Island.

The cohort study for the disease burden analysis was supposed to be done on the basis of rapid household assessment; nevertheless, the commencement of the study is behind schedule. Though it took certain amount of time to develop the protocol due to close discussions for developing the protocol, ethical approval process by the Institutional Review Board (IRB) and the exchange of MOA, the Project has developed it on the basis of available information of the etiological analysis and the rapid assessment results as of the time of the Mid-term Review.

(3) Output 3

The Project hasn't reached at the identification of risk factors for severe childhood pneumonia with sufficient evidences due to the aforementioned backdrops as of the time of the Mid-term Review. By taking the remaining project period into consideration, the Project is accelerating preparation work for the cohort study on the basis of currently available information such as analysis results of the etiological study as well as the rapid household assessment.

(4) Output 4

The Project grasped an outline of possible risks for childhood pneumonia as well as other related information such as health seeking behavior from the results from the rapid household assessment conducted in 2012. In advance of the cohort study, the Project also evaluated the actual situation of primary healthcare system from various aspects, by taking opportunity of the census.

The Project had just started designing the intervention study using basic information such as the said surveys in light of current progress of the project activities as well as remaining project period, in order to commence it by the year of 2014. It is necessary to secure intervention period as long as possible (two epidemic seasons at least) in order to measure the intervention effects more precisely; hence, the Project put their efforts to start the intervention study as early as possible by amending the preliminary-designed interventions by reflecting the analysis results of the cohort study where needed.

(5) Output 5

As summarized in the achievements of OVIs below, achievements of the project activities including research outcomes has been shared amongst relevant parties with annual research forums, feedback forums at the Biliran and Leyte provinces so far. In addition to this, two scientific articles with regard to project research outcomes were published in the international journals; and also, oral and poster presentations were made at domestic and/or international scientific conferences. It is highly anticipated that the Project would come out with many research outcomes via scientific journals, conferences and so on.

(6) Project Purpose

As was described at the "*Achievements of Outputs*" section, individual evidences had been gained with regard to identification of viruses from pediatric patients with pneumonia at sentinel sites as well as its genetic analysis, whereas, the progress of whole project is behind schedule in approx. one year as of the time of the Mid-term Review. Hence, it is of big concern that implementation period of the evidence-based intervention study, which is the most important component of the Project, might be limited accordingly.

As a countermeasure for this, the Project is reinforcing their efforts to conduct the intervention study and gain research outcomes with evidences as high as possible by rearranging implementation

process of the project activities.

3-2. Summary of Evaluation Results

(1) Relevance

The effectiveness of the Project is considered to be moderate at the time of the Mid-term Review.

With regard to the consistencies of the consistency of the Project Purpose with the Philippine Health Policies, the needs of the target groups and Japan's aid policies that were confirmed at the Ex-ante Evaluation of the Project in December 2008, there wasn't any alteration of the Philippine health policies as well as the needs so as to undermine the relevance of the Project, that is to say, the consistencies are being maintained at the time of the Mid-term Review.

(2) Effectiveness

Though the effectiveness of the Project is considered to be high in general, it is desired to consolidate mechanisms further to sustain the effectiveness.

The study of viral etiology has been progressing so far and individual evidences are gained as of the time of the Mid-term Review, whereas full-scale operation of bacteriological testing hasn't yet be started due to the delay in setting up of laboratory environment. Having said that, the Project has got several findings regarding bacterial etiology as reference information. Moreover, it took certain amount of time to obtain the ethical approval for the whole researches of the Project. Accumulation of the said delays was resulted in approx. one-year delay on the whole. For these reasons, project achievements including research outcomes haven't been gained as of the Mid-term Review, in comparison to the expected accomplishments envisaged at the time of the commencement of the Project. The Project has managed to grasp an outline of etiology of infectious diseases as well as envisaged risk factors for severe childhood pneumonia from etiological study at sentinel sites and the rapid household assessment in the Biliran province. The Project is planning to commence the cohort study just after the time of the Mid-term Review. By taking the remaining project period into consideration, the Project is rearranging the Plan of Operations (PO) as follows: the Project start to design a intervention methodology in parallel with the cohort study; and to finalize the methodology by reflecting the results from the cohort study, so that the level of evidences obtained through the project research activities won't be diminished.

With regard to the aspect of technical transfer, various research and diagnostic technologies had been transferred to RITM, and they has reached at a certain technical level enough to maintain and enhance the technology by themselves. It is notable that, concerning to virological analysis, hMPV, type C influenza virus and EV 68 were isolated for the first time in the Philippines; implying that RITM has enhanced their capacity not only as a research institute but also national reference laboratories. Concerning to bacteriological testing, the Project has facilitated and supported the conduct of molecular diagnosis for detection of atypical bacteria in 2 sentinel sites. Moreover, RITM enhanced their capacity of epidemiological analysis such as the spatial analysis for childhood pneumonia as of the time of the Mid-term Review.

(3) Efficiency

The efficiency of the Project is at an intermediate degree as of the time of the Mid-term Review, as several internal and external factors negatively affected smooth implementation of research activities.

It took 5 months for a project coordinator to arrive at his post, affecting hiring process of external project staffs. Moreover, the delay of installation work (specifically, power distribution work and office procedures for it) as well as longer-than-expected time for discussion regarding design / contents of field survey among the Project members, obtaining ethical approval by the IRB and signing MOA for research implementation also affected the progress of the project research activities, resulting in approx. one year delay on the whole. The Project had discussions with relevant parties in each issue, and information exchange amongst players of the Project with regard to research findings and monitoring results has been continued regularly; nevertheless, the project research activities are behind schedule by approx. 1 year on the whole as a consequence as of the time of the Mid-term Review. Though the Project has been properly monitored from the perspective of progress control, not only the Project but also other relevant organizations such as JICA should have take strong countermeasures for the said backdrops to avoid significant delay of whole progress of the Project in timely manner.

As was described at the "*Effectiveness*" section, the Project has just started to rearrange the PO of the

research activities scheduled in the latter half of the project period. In accordance with the rearrangement of the activities, it is envisaged that the needs for overlapping several component of the research themes as well as relocation of human resources and budget. Therefore, it is desired for the Project to do a strict process control of the project research activities hereafter.

(4) Impact

The following positive impacts are confirmed and/or expected by the implementation of the Project.

The Project sets "*Reduction of mortality due to childhood pneumonia*" as an Overall Goal. In order to realize this in future, effective interventions shall be vilified within the time frame of the Project; subsequently, utilized by DOH for communicable disease control in the Philippines. Meanwhile, the cohort study is about to commence at the time of the Mid-term Review, and subsequent intervention study supposed to be done at the final phase of the Project. Moreover, the interventions proposed by the Project will be highly dependent on its evidence level and feasibility whether those are applied for the control of childhood pneumonia by DOH.

On the other hand, the Project has already obtained several scientific findings regarding the features of childhood pneumonia, such as the significance of viral pneumonia for it. Obtaining evidences for intervention effects with regard to the reduction of incidence of severe pneumonia is envisaged as an indicator for the achievement of the Project Purpose. It is, nevertheless, expected that many individual evidences will be obtained by analyzing a set of data from cohort survey and intervention study from many directions.

(5) Sustainability

A self-sustainability as well as a self-deployment of the benefits provided by the Project can be expected to some extent as of the time of the Mid-term Review.

On the other hand, the purpose of the Project is to obtain evidences regarding intervention effective for the reduction of death from childhood pneumonia. On the basis of this achievement, the Project is expecting actual reduction of child mortality due to pneumonia as an Overall Goal. For the sake of it, it is necessary for the interventions, evidenced by the Project, to be adopted for measures of infectious disease control (esp. childhood pneumonia) practically. In order for the interventions to be adopted, as a matter of course, it is highly dependent on the level of its effectiveness and feasibility of the intervention. Therefore, it is desired for the project to start the discussions amongst relevant and responsible parties such as DOH in light of the utilization and/or application of the achievements (esp. interventions) of the Project, and he packaged intervention, which will be developed by the Project, should contain not only a operational guide but also necessary materials and equipment, cost analysis results, etc. for smooth introduction of the interventions.

From the aspect of technical sustainability, RITM already possesses know-how and experiences of field researches including cohort study. The Project is planning to commence a cohort study and subsequent intervention study. It is expected that both RITM and the JICA experts (researchers) will further enhance capacity of field study.

3-3. Factors that promoted the attainment of the Project

(1) Concerning the project design

No major promoting factor concerning project design has been observed as of the time of the Mid-term Review.

(2) Concerning the implementation process of the Project

The RHUs under the target municipalities had supported the project field staffs to conduct the rapid assessment as well as the census by providing them household data and by accompanying them for interview researches even at remote areas. Since their support had significantly contributed precise and rapid streamlined implementation of the survey, this can be recognized as a contributing factor for efficiency of the Project.

3-4. Factors that impeded the attainment of the Project

(1) Concerning the project design

No major hindering factor concerning project design has been observed as of the time of the Mid-term Review.

(2) Concerning the implementation process of the Project

Since the said internal and external causes of the delays negatively affected smooth implementation

of the project research activities as well as steadily generation of research outcomes, those are recognized as hindering factors of the Project.

3-5. Conclusions

Advanced testing technologies such as isolation and identification of viral pathogens necessary for the project research activities have already been effectively transferred to RITM, and the Project has already obtained several scientific findings related to features of childhood pneumonia, such as significance of virus infection in child pneumonia. It is expected that many individual evidences will be obtained by analyzing a set of data from cohort survey and intervention study from many directions by the end of the Project.

However, because there has been about a year delay of implementation of studies of etiology, disease burden, and risk factor analysis, it is difficult to predict whether the validation of effective interventions to reduce mortality due to pneumonia in children (project purpose) could be achieved at the end of the Project.

To achieve the project purpose and expected outputs, the step-wisely designed study schedule should be adjusted to implement in parallel avoiding losing scientific validation. The Project should review the study schedule; start necessary preparation to meet to the schedule in collaboration with related organizations. The Project and JICA should manage the operation further sensitively and collaboratively not to make delay of activities. In addition, it is expected that both RITM and JICA experts (researchers) will further enhance capacity of field study; thus, it is desired that RITM as well as JICA experts (researchers) would put their efforts to analytical work of these studies on top of the operational management collaboratively. It is also important to promote dissemination of evidences to DOH and related partners, such as WHO and UNICEF.

3-6. Recommendations

- The Project, ONP and JICA Philippines Office should monitor the generator installation work at ONP not to happen further delay so that the bacteriological testing result can be referred as scientific observations.
- Related to the fact the referential bacteriological analysis showed a low detection rate at all sentinel sites, there are still discussions on future direction of research on etiological study in bacteriology. The clinical and laboratory working group (Working Group A) should discuss and decide whether the Project will introduce other testing methods to improve the detection rate, considering various priorities in the Project and its resource limitation.
- The findings of the Project, such as the significances of virus infection in childhood pneumonia and the incidence of pertussis-related severe pneumonia, could be used by the policy making bodies as references for further reviewing strategy to reduce child mortality due to pneumonia in the Philippines, e.g. revising treatment guidelines, and evaluating cost-effectiveness of introduction of pneumococcal conjugate vaccines. The Project should disseminate the findings and develop an intervention package (incl. operational guide, necessary materials and equipment and human resources, cost analysis, etc.) in a practical manner so that DOH and relevant organizations can easily assess the feasibility.
- The Project should collect information on various field activities by various actors that are related to the Project in order to check the feasibility of the approaches of intervention, and have close discussion with DOH and local health authorities to decide them. JICA should facilitate information exchange between JICA experts and actors such as DOH and JICA projects in the area of the maternal, newborn and child health.
- To secure two pneumonia epidemic seasons for follow-up period, the Project should take the following actions to start the intervention study as early as possible.
  - To develop a complete schedule including detail activities and financial/human resource inputs, such as a Gantt chart, by the end of October 2013, considering timeline to reach consensus on intervention study, to get ethical approval etc.;
  - To share the complete schedule with relevant parties to implement the planned activities collaboratively;
  - To start the cohort study as early as possible; and
  - To adjust the design of the intervention study based on new findings from the cohort analysis if necessary.

- The Project should discuss the appropriate allocation of input within the project budget balancing further research priority activities and necessary inputs including assignment of Japanese researchers.
- RITM should take necessary actions to develop an action plan on utilization of provided equipment to RITM and sentinel sites after the end of the Project by March 2014 in collaboration with the relevant parties (DOH, designated hospitals, LGU and CHD) and JICA experts.
- The latest PDM (version 1) should be revised; the indicators should be modified for better process management and to evaluate achievement of the Project Purpose and expected Outputs more precisely. The Team suggests that the Project should revise the PDM when the detailed schedule in the latter half of the Project are finalized, and submit it to JCC to get approved around April 2014. The Team offers a revision example as shown in the PDM attached hereto (Annex 6) for the sake of smooth implementation of revision work by the Project.

3-7. Lessons Learnt

- The Outputs of Project have designed and structured to be proceed one after another as follows: "Etiology Studies (Output 1)" and "Disease Burden Studies (Output 2)" would be conducted interactively; "Risk factor analysis (Output 3)" is done based on the former results; and "Intervention Study (Output 4) is finally done based on the all the findings and observations. Therefore, it might have a risk for substantial delay to the whole progress of the project activities in case that even one point in the Output flow was interrupted. In fact, the Project had discussions amongst relevant parties for each issue so far, and resulting in approx. one-year delay.
  As a lessons learnt from above-mentioned experiences, in case that the Outputs of the project are serially-cascaded, one point interruption of the cascade can cause a total delay of the progress of the project activities for the achievement of the project Purpose. For the project is designed in that manner; therefore, countermeasures should be taken as soon as possible when some delays were anticipated.
- In case that construction works are required for provision of equipment and set-up of laboratories, researchers, project coordinator and JICA local office can't always deal with technical matters. Therefore, it is necessary to dispatch Japanese consultant(s) with required expertise at designing phase for such cases.

第１章　中間レビューの概要

１－１　調査団派遣の経緯

肺炎を中心とする重症呼吸器感染症は途上国において小児の死亡原因の25～30％を占める深刻な問題であり、国連ミレニアム開発目標（Millennium Development Goals：MDGs）のゴール4に掲げられている「2015年までに5歳未満児の死亡率を1990年の水準の3分の2に削減する」を達成するための重要課題の1つである。しかし、ウイルス感染を含めたその実態はいまだに明らかになっておらず、さまざまな努力にもかかわらず今も世界中で約200万人の小児が肺炎により毎年死亡していると推計されており、小児の肺炎の95％が途上国において発生している。

かかる状況の下、フィリピン共和国（以下、「フィリピン」と記す）より地球規模課題対応国際科学技術協力事業（Science and Technology Research Partnership for Sustainable Development：SATREPS）として「小児急性肺炎を対象とした包括的疫病学調査プロジェクト」が要請され、これと並行して国内研究協力機関である東北大学大学院医学系研究科より独立行政法人科学技術振興機構（Japan Science Technology Agency：JST）に対し研究申請が行われた。これを受け、同事業に携わる文部科学省、JST、外務省、JICAの4機関が審査を行った結果、「小児呼吸器感染症の病因解析・疫学に基づく予防・制御に関する研究プロジェクト」（以下、「本プロジェクト」と記す）が2011年4月から2016年3月までの5年間を協力期間として採択された。

本プロジェクトは、プロジェクトが開始された2011年でも5歳未満児死亡率が出生1,000当たり31と依然として高く[1]、肺炎が乳幼児の死亡原因の第1位を占める[2]フィリピンにおいて、同国の実施機関であるフィリピン熱帯医学研究所（Research Institute for Tropical Medicine：RITM）とわが国の東北大学が協働して、フィリピンにおける小児肺炎の病因・疫学の全体像の解明、小児肺炎の重症化因子の詳細な解析、及びそれに基づいた効果的な治療・予防策の検討を行うことを目的として実施している。

今回実施の中間レビュー調査では、本プロジェクトの目標達成度や成果等を分析するとともに、プロジェクトの残り期間の課題及び今後の方向性について確認し、合同評価報告書に取りまとめ、合意することを目的とする。

１－２　中間レビューの目的

中間レビューの目的は以下に示すとおりである。

(1) PDM（Version 1）（付属資料 1）に基づいてプロジェクトの中間段階における進捗をレビューし、評価 5 項目の評価基準に従って評価時点でのプロジェクト成果を評価する。

(2) プロジェクトの成果及び目標に対する促進要因及び阻害要因を検討する。

(3) 上記の分析結果に基づいてフィリピン側と共同で残りのプロジェクト期間での活動方針について協議する。

[1] 出所：世界銀行ホームページ（http：//data.worldbank.org/indicator/SH.DYN.MORT）
[2] 出所：フィリピン国保健省ホームページ（http：//www.doh.gov.ph/kp/statistics/child_mortality.html）

(4) 今後のプロジェクト目標及び想定される上位目標[3]の達成に向けた提言を行うとともに、必要に応じて PDM の見直しを行う。

(5) 合同中間レビュー報告書に調査結果を取りまとめる。

１－３　合同レビュー調査団のメンバー

中間レビューは、JICA 及び 3 名のフィリピン側評価委員と合同で実施した。合同レビューチーム（以下、「レビューチーム」と記す）の構成は以下のとおりである。

なお、フィリピンにおける現地調査には、SATREPS の枠組みのなかで日本国内での研究を支援している JST は JICA の実施する中間レビュー調査と同時に 2 名の調査団をフィリピンにおける現地調査に派遣し、独自の評価調査を行うとともに、専門的見地から研究活動に対する技術的な助言を行った。

＜日本側＞

担当分野	氏　名	所　属	現地派遣期間
団長・総括	牧本　小枝	JICA 人間開発部 保健第二グループ保健第三課 課長	2013.9.17～ 2013.9.24
協力企画	阿部　将典	JICA 人間開発部 保健第二グループ保健第三課 職員	2013.9.17～ 2013.9.24
評価分析	井上　洋一	㈱日本開発サービス　調査部　主任研究員	2013.9.10～ 2013.9.24

＜フィリピン側＞

氏　名	所　属
Dr. Madeleine de Rosas-Valera	Under Secretary of Health, Health Policy Finance and Research Development Cluster, the Department of Health (DOH)
Ms. Maylene Beltran	Director, Bureau of International Health Cooperation, DOH
Dr. Juanita A. Basilio	Medical Officer, Family Health Office, Women, Children and Family Health Cluster, DOH

＜JST メンバー＞

担当分野	氏　名	所　属	現地派遣期間
感染症対策	倉田　毅	SATREPS　JST 研究主幹 （国際医療福祉大学 塩谷病院　教授） （オブザーバー）	2013.9.19～ 2013.9.21
計画・評価	佐藤 雅之	JST 地球規模課題国際協力室　上席主任調査員 （オブザーバー）	2013.9.17～ 2013.9.22

評価調査は 2013 年 9 月 10 日から同 25 日に実施し、サイト視察、インタビュー、プロジェクト報告書等の関連文書レビューを実施した（付属資料 2）。

[3] SATREPS の枠組みでは、PDM 上で上位目標は必ずしも設定されない。

１－４　プロジェクトの枠組み

最新 PDM である Version 1（2011 年 2 月 14 日）に示されるプロジェクトの要約（プロジェクト目標、成果、活動）を以下に示す。

プロジェクトの要約

上位目標	小児肺炎に起因する死亡率の低下
プロジェクト目標	小児肺炎の病因、疾病負荷、リスク因子が明らかになり、小児肺炎による死亡を低減させるための有効な介入が確認される。
成果	成果 1：選定されたサイトで小児肺炎・呼吸器感染症の病因が測定される。 成果 2：選定されたサイトで小児肺炎による疾病負荷が測定される。 成果 3：小児の重症肺炎のリスク因子が同定される。 成果 4：小児肺炎による死亡を減少させるための介入が評価される。 成果 5：小児肺炎対策戦略の改善・刷新のため、研究成果が発表される。
活動	活動 1 1-1. 選定された公立病院で病因研究のための適切な検査体制を整備する。 1-2. 小児肺炎の病因を検出、同定、解析するための RITM の能力を強化する。 1-3. 選定された第 1 次医療施設に病因研究のためのセンチネル・サイトを設置する。 1-4. 肺炎・他の呼吸感染症の小児の細菌性・ウイルス性病原体の検体を収集し、検査する。 1-5. センチネル・サイトでの検体の収集、検査をモニタリングする。 活動 2 2-1. 肺炎と、肺炎に関連する死亡の発生率を測定するための方法論を確立する。 2-2. 肺炎と、肺炎に関連する死亡の発生率を測定するためのデータを解析する。 活動 3 3-1. 統合されたデータベースを整備し、管理する。 3-2. 病因研究、疾病負荷研究のデータを利用し、リスク因子を明らかにする。 活動 4 4-1. 病因・疾病負荷・リスク因子に関する研究結果に基づき、小児肺炎による死亡を低減させるための介入研究の方法が開発される。 4-2. 小児肺炎の現行の戦略を見直すため、国、地方の関係者と協働する。 4-3. 選定されたコミュニティで介入研究を実施する。 4-4. 小児肺炎の負荷を低減させるための新しい戦略を評価するため、国、地方の関係者と協働する。

	活動 5 5-1. 研究成果を普及させるための会議やワークショップを開催する。 5-2. 国際的な学会や学術誌を通じ、研究成果を普及させる。 5-3. 保健省の国家急性呼吸器感染症対策（Control of Acute Respiratory Illness：CARI）プログラムに対し、研究により得られた知見を政策策定のための情報として提供し、助言を行う。

第２章　中間レビューの方法

２－１　SATREPS におけるプロジェクト評価の枠組みについて

SATREPS は JST による日本国内での技術的・財政的研究支援と JICA による現地での技術協力プロジェクト実施協力が連携して推進されることから、評価活動実施の効率性もかんがみ、現地調査を JST と JICA が連携、協力して実施される。

JST は地球規模課題の解決に資する研究成果、科学技術水準の向上の観点から日本国内及び相手国を含めた国際共同研究全体の評価を行う。また、JICA はプロジェクト運営の一環として、政府関係者・研究代表者を含めた先方協力機関等と共同で、ODA 事業として相手国における人材育成、能力強化及び開発課題に対する貢献の観点から評価（レビュー）を実施する。

２－２　評価手法

中間レビューは「JICA 事業評価ガイドライン」（2010 年 6 月）に沿って実施された。実績・実施プロセスの確認と 5 項目評価を行うための調査項目について具体的な方法を検討するため、評価設問、必要な情報・データ、情報源、データ収集方法について一覧表で示した評価グリッド（付属資料 3）を作成した。

評価チームのメンバーは評価グリッドに基づき、C/P 研究者や各関係機関、日本人専門家に対して質問票やインタビューを実施し、プロジェクトのレビューを実施した。主要面談者は付属資料 4 を参照のこと。

PCM の常法に則り、最新の PDM Version 2 に基づいて指標の達成度を含めたプロジェクト実績を確認し、評価 5 項目での評価分析を行った。合同レビューチームは、評価結果を合同レビュー報告書に取りまとめた。

２－３　評価 5 項目

本中間レビューに用いた評価 5 項目の概説を以下の表－１に示す。

表－１　評価 5 項目の概説

評価 5 項目	概　説
妥当性	プロジェクトの目標（PDM のプロジェクト目標、上位目標）が、受益者のニーズと合致しているか、援助国側の政策と日本の援助政策との整合性はあるかといった、「援助プロジェクトの正当性」を検討する。中間レビューでの妥当性評価は、現状・実績に基づいて検証作業を行う。
有効性	PDM の「プロジェクトの成果」の達成度合いと、それが「プロジェクト目標」の達成にどの程度結びついたかを検討する。中間レビューでの有効性評価は、評価の必要性・可能性に応じて検証作業を行う。
効率性	プロジェクトの「投入」から生み出される「成果」の程度を把握する。各投入のタイミング、量、質の適切度を検討する。中間レビューでの効率性評価は、現状・実績に基づいて検証作業を行う。
インパクト	プロジェクトが実施されたことにより生じる直接・間接的な正負の影響を検討する。中間レビューでのインパクト評価は、評価の必要性・可能性に応じて検証作業を行う。

持続性	援助が終了した後も、プロジェクト実施による便益が持続されるかどうか、自立発展に必要な要素を見極めつつ、プロジェクト終了後の自立発展の見通しを検討する。中間レビューでの持続性評価は、予測・見込みに基づいて検証作業を行う。

第３章　プロジェクトの実績と実施プロセス

３－１　投入

(1) 日本側投入実績

以下に、2013 年 3 月 31 日現在のプロジェクトに対する日本側からの投入を示す。詳細は付属資料 5 を参照のこと。

構　成	投　入
日本人専門家の派遣	JICA 専門家：延べ 3 名（業務調整）（2011 年 9 月 26 日～2013 年 2 月 7 日、2013 年 2 月 12 日～2013 年 6 月 11 日、2013 年 6 月 2 日～2015 年 6 月 1 日） その他の専門家（研究者）：延べ 34 名〔うち、6 名は JST 経費負担（2011 年 4 月～2011 年 6 月）〕 その他の専門家（研究者）の派遣期間合計：19.7 人/月 〔JST 経費：2.5 人/月、JICA 経費：17.2 人/月（2011 年 4 月 1 日～2013 年 3 月 31 日時点）〕
資機材の提供	総額（円）：約 1.14 億円 内容：血液酸素飽和度測定器、血圧計、電子体温計、聴診器、検耳鏡等の医療機器。リアルタイム PCR システム、サーマルサイクラー、凍結乾燥機、安全キャビネット、オートクレーブ、CO_2 インキュベーター、ディープフリーザー等の研究関連機器。実験試薬、図書、PC、他
本邦研修	延べ人数：4 名 研修内容：疫学に関する研究、非定型肺炎の診断方法、呼吸器感染症起因ウイルス分離方法等 延べ期間：64 日/人
現地活動費	在外事業強化費：34,590 千円（2011 年 4 月～2013 年 3 月末まで） ・2011 年度：8,533 千円 ・2012 年度：26,057 千円
その他	検査及びフィールド活動スタッフ雇用：48 名（51,133 千円）（2011 年 4 月～2013 年 3 月末まで）

(2) フィリピン側投入実績

以下に、2013 年 3 月現在のプロジェクトに対するフィリピン側からの投入を示す。詳細については付属資料 5 を参照のこと。

構　成	投　入
カウンターパート配置	RITM：17 名 ・管理部門 4 名 ・ワーキンググループ A（病院）：7 名 ・ワーキンンググループ B（フィールド調査及びデータ収集・分析）：4 名 ・ワーキンンググループ C（センチネル・サイト）：2 名 東ビサヤ地域医療センター（Eastern Visayas Regional Medical Center：EVRMC）：1 名（病院長） ビリラン州立病院（Biliran Provincial Hospital：BPH）：1 名（病院長） パラワン病院（Ospital ng Palawan：ONP）：1 名（病院長）

施設及び資機材	1. 事務スペース及び倉庫 2. RITM 内研究スペース（微生物学ラボ、ウイルス学ラボ及び分子生物学ラボ） 3. EVRMC、BPH 及び ONP 内プロジェクト専用検査室スペース 4. 安全キャビネット、インキュベーター、撹拌機、循環流動層焼却炉等、研究に必要な既存の機器類
現地活動費	水道光熱費（USD または日本円換算　金額算定不能）

３－２　プロジェクトの実績

(1) プロジェクト活動の実績

成果に係るプロジェクト活動実績を以下に示す。

成果 1：選定されたサイトで小児肺炎・呼吸器感染症の病因が測定される。	
活　動	達成事項
1-1．選定された公立病院で病因研究のための適切な検査体制を整備する。	・病因研究における、一般血液検査、細菌培養検査は地方拠点施設の検査室で行うため、プロジェクト開始時に細菌培養検査が実施できていなかった、BPH・ONP において細菌検査体制の整備が行われてきた。BPH・ONP では検査室の改装、物品調達が進められた。 ・しかしながら、ONP においては血液培養のための CO_2 インキュベーターの電源安定供給のために供与されたジェネレーターの接続配線工事が遅れているため、全サイトで細菌培養検査が本格的に開始できるのは 2013 年末になると見込まれている。 ・4 つの病院で X 線写真撮影・1 次読影を行い、写真を RITM へ送り 2 次読影、確認を行うシステムを確立した。
1-2．小児肺炎の病因を検出、同定、解析するための RITM の能力を強化する。	・RITM への機材供与及びウイルス・分子生物学・細菌学各部門技術移転を行い、ウイルス分離効率を向上し、C 型インフルエンザウイルスなどいくつかのウイルスをフィリピンで初めて分離した。ウイルスや細菌の塩基配列同定などの遺伝子解析体制を強化し、また、PCR による非定型肺炎の原因菌の検出なども可能となった。 ・ウイルス及び細菌検出に関する技能向上を目的として、23 年 10 月より 2 カ月間、短期研究員（2 名）を受け入れ、現在帰国して RITM において検査部門の中心的な役割を担っている。
1-3．選定された第 1 次医療施設に病因研究のためのセンチネル・サイトを設置する。	・EVRMC のあるタクロバン周辺においては、レイテ州立病院及びタナウアン Rural Health Unit（RHU：町ごとの第 1 次医療施設）にセンチネル・サイトが設置された。 ・ビリランにおいては、2 つの Municipality（町）がコホート・サイトとして選定され、両町の RHU においてサイト設置のための整備が現在進められており、中間レビュー時点でセンチネル・サイトとしての準備が進められている。

1-4．肺炎・他の呼吸感染症の小児の細菌性・ウイルス性病原体の検体を収集し、検査する。	・拠点病院では、2011 年 4 月から 2013 年 7 月末までに、以下のように重症患者から検体採取し病原体の解析を行った。 ・EVRMC：2011 年 4 月より開始（累積患者数：1,366 名） ・ONP：2012 年 8 月より開始（累積患者数：473 名） ・BPH：2012 年 9 月より開始（累積患者数：431 名） ・RITM：2012 年 9 月より開始（累積患者数：68 名） ・また、タクロバン周辺においては、同時期に拠点病院周辺のヘルスセンターを受診した呼吸器感染症患者のうち 793 名から検体を採取し、ウイルス解析を行った。 ・RITM では細菌解析が行われているが、BPH 及び ONP では停電による血液培養への影響回避のためのジェネレーター据え付け（接続配線）工事の遅れにより細菌検査の実施に支障を来している。
1-5．センチネル・サイトでの検体の収集、検査をモニタリングする。	・2011 年 4 月から 2013 年 7 月末までに、JICA 専門家及び現地 RITM 職員が延べ 54 回各サイトを訪問した。

成果 2：選定されたサイトで小児肺炎による疾病負荷が測定される。	
活　動	達成事項
2-1．肺炎と、肺炎に関連する死亡の発生率を測定するための方法論を確立する。	・RITM と JICA 専門家が協力して、研究デザインとしてコホート[4]を設定し、正確な肺炎の死亡率及び発生率を算出するための方法論を確立した。具体的には、事前調査によるコホート地域の選定と、当地域における前向きの追跡調査によって発生率を計算するというものである。
2-2．肺炎と、肺炎に関連する死亡の発生率を測定するためのデータを解析する。	・そのデザイン・方法論の実現可能性及びコホート・サイトの選定を目的とした事前調査（迅速世帯調査）によって、ビリラン州全体の世帯状況・経済状況・肺炎リスク・受療行動を調査し、過去の罹患歴からの肺炎（人/年当たり）及び死亡率を算定した。 ・それに基づき州内の 2 町 25 村をコホート研究[5]サイトとして選定し、中間レビュー時点で 5 歳未満の子どもを前向きの追跡調査対象者としてコホート研究への登録が終了した段階である（約 2,500 名）。

[4] 追跡調査を実施する対象の集団または特定の地域
[5] 特定の地域や集団に属する人々を対象に、長期間にわたってその人々の健康状態と生活習慣や環境の状態などさまざまな要因との関係を調査する研究のこと。

成果 3：小児の重症肺炎のリスク因子が同定される。	
活　動	達成事項
3-1．統合されたデータベースを整備し、管理する。	・各拠点病院及び RITM において病因研究のためのデータベース構築を行い、各サイトにおいては入力スタッフのトレーニングを行い、ダブルエンコードによるデータ入力及び、そのデータの更新が定期的に行われている。 ・中間レビュー時点において、コホート調査開始を受けて、RITM でのサーバーの設置が完了し、各拠点病院及びコホート・サイトでの統一的データベースプラットフォームを構築中である。
3-2．病因研究、疾病負担研究のデータを利用し、リスク因子を明らかにする。	・2012 年に実施されたコホート調査の準備段階として迅速世帯調査を実施し、リスク因子に関する町レベル及び世帯レベルの基礎的情報を取得した。 ・中間レビュー時点では、コホート調査の準備が開始された段階であり、コホート調査のためのスタッフ研修を 2013 年 10 月に予定している。

成果 4：小児肺炎による死亡を減少させるための介入が評価される。	
活　動	達成事項
4-1．病因・疾病負担・リスク因子に関する研究結果に基づき、小児肺炎による死亡を低減させるための介入研究の方法が開発される。	・コミュニティや第 1 次医療機関への介入研究の方法は、成果 3 のコホート調査を踏まえて実施されるため、中間レビュー時点ではその方法は決定されていない。 ・しかしながら、プロジェクト期間を有効に活用するために、迅速調査や病因研究の結果を踏まえて、想定される介入方法に関する検討が開始されている。
4-2．小児肺炎の現行の戦略を見直すため、国、地方の関係者と協働する。	・2013 年 6 月に実施された JCC において、保健省の本プロジェクト担当官が割り当てられ、小児呼吸器感染症対策戦略について、今後協議を進めることが確認された。
4-3．選定されたコミュニティで介入研究を実施する。	・活動 4-1 を参照。
4-4．小児肺炎の負担を低減させるための新しい戦略を評価するため、国、地方の関係者と協働する。	・活動 4-1 を参照。

成果 5：小児肺炎対策戦略の改善・刷新のため、研究成果が発表される。	
活　動	達成事項
5-1. 研究成果を普及させるための会議やワークショップを開催する。	・RITM 内において年次報告会を 2 回開催した。 ・また、レイテ島及びビリラン島においてフィードバックフォーラムを各 1 回開催した。
5-2. 国際的な学会や学術誌を通じ、研究成果を普及させる。	・RS ウイルスの検出及び遺伝子解析の結果を Journal of Clinical Virology 誌に発表した。 ・エンテロウイルス 68 の検出及び解析の結果が PLoS One 誌に 2013 年 9 月 20 日に掲載された。

5-3. 保健省の国家急性呼吸器感染症対策（CARI）プログラムに対し、研究による発見を政策策定のための情報として提供し、助言をする。	・CARI プログラムの担当者との協議は行っているが、介入研究がまだ実施されておらず、政策策定の助言を行うには至っていない。

(2) 成果の達成

1) 成果 1

病因研究における検査体制については、検査同意入院患者の一般血液検査、細菌培養検査及び X 線写真撮影・1 次読影はセンチネル・サイトで行い、同時に検体（鼻咽頭ぬぐい液及び血清）及び X 線写真を RITM に輸送しウイルス検査及び X 線写真 2 次読影を行えるようにフィリピン国内のネットワークを構築した。病原体の詳細な解析は RITM において行うことになるが、それに先立ち東北大学の研究スタッフが RITM への技術移入を行い、各検査施設における体制強化のための機器購入及び増改築を進めて、RITM において病原体の解析ができるシステムを確立した。

また、4 つのセンチネル・サイトにおいては、呼吸器感染症患者から検体採取、患者情報の収集が開始された。加えて、EVRMC 及び BPH の管轄圏内にある RHU との連携を図り、重症肺炎に加え、入院するまでには重症とはならなかった患者からも検体を採取する予定であるが、タクロバン周辺では既に 2011 年 4 月から実施されており、中間レビューまでに検体採取から輸送、ラボでの解析、データの分析等の一連のシステムが確立したことが確認された。

RITM においてはウイルス学的検査によって原因ウイルスの分析が進んでいるが、RITM を含む 4 つのセンチネル・サイトでは細菌培養検査を実施している。しかしながら、これまで培養を行うための CO_2 インキュベーター等の研究機器や設備の安定した電源を確保するためのジェネレーター設置の遅延があり、停電の多い地方サイトでの細菌学的検査の本格稼働が大きく遅れた。他方、百日咳菌が PCR 法により検出されているものの、細菌学的分析[6]結果では、全体的に病原性細菌の陽性率は低い。これは、約 40%の患児が何らかの理由により入院前に抗生物質の投与を受けており、採取された血液中からの病原性細菌の陽性率に一定の影響を及ぼしている可能性が明らかとなった。

これに対してプロジェクトは、細菌検出率向上に向けていくつかの選択した検体に PCR 法による検査を実施しているが、そこで細菌陽性を示した検体は数%程度である。そもそも、患児から採血できる検体量は限られており、小児からは喀痰を採取することが困難な場合も多いことから、小児肺炎疑い患者に対する細菌学的検査は技術的に困難な側面を有している。よって、プロジェクト、特にワーキング A（病院検査室グループ）は細菌学的病因研究について明確な方向性を示すことが求められる。

他方、ウイルス学的検査では、臨床的に肺炎と診断された患児の呼吸器検体からウイルスが 43.2%の割合で検出され、RS ウイルスが約 30%、他にライノウイルス、インフルエンザ B 型、エンテロウイルスなどが検出されている。このことから、中間レビューまでに、

[6] 培養のための CO_2 インキュベーターが停電により室温培養となっている可能性が否定できず、論文データとしての信頼性を担保できないことから、現在まで得られている細菌学的検査結果はあくまで参考情報としてのみ使用される。

フィリピンにおける小児肺炎の原因として RS ウイルスを中心としたウイルス感染の重要性が強く示唆されたとの知見が得られている。

成果 1 の達成度を以下に示す。

成果 1：選定されたサイトで小児肺炎・呼吸器感染症の病因が測定される。	
指標 OVIs	達成度
1-1．4 カ所のセンチネル・サイトで細菌性・ウイルス性病原体が確認され、その構成比が明らかになる。	・各拠点病院の検体から検出されたウイルスは以下である。Adenovirus（0.5%）, CMV（1.1%）, Enterovirus（1.1%）, Influenza A（H3N2）（0.5%）, Influenza A（H1N1）pandemic（0.5%）, Influenza B（2.7%）, Influenza C（0.1%）, hMPV（2.4%）, Rhinovirus（5.1%）, RSV（29.1%）, 混合感染（1.9%）。また、細菌検査では少数ではあるが現在世界的な流行が示唆されている百日咳菌の遺伝子が 10 例で検出された。
1-2．4 カ所のセンチネル・サイトで、確認された病原体と検出された小児重症肺炎の関連が明らかになる。	・重症化に重要なウイルスを確認し、今後コホート研究において、患者（2 件の死亡例を含む）の背景因子もリスク因子を解析する。

2) 成果 2

中間レビュー時点では、疾病負荷研究サイトをビリラン州に絞り、そこでの小児肺炎の死亡率に及ぼすインパクトを低下させる介入研究を視野に入れたフィールド調査が進行中である。2012 年には、ビリラン島全体の重症肺炎の発生率をとらえると同時に、社会経済的な背景や受療行動パタンなど、リスク因子に関する情報を収集する目的で、WHO により開発された口頭剖検[7]を用いて迅速世帯調査が実施された。迅速調査の結果では、肺炎による死亡への寄与は限定的であったが、逆に重症肺炎の発生率が高いことが明らかとなった。これに基づき、コホート研究の実施サイト（2 町 25 村）が確定すると同時に実施プロトコルが完成、東北大学及び RITM で倫理承認が得られた。また、全体的な研究に関する RITM-ビリラン州間の合意覚書（Memorandum of Agreement：MOA）については、2013 年 9 月に交わされている。

当初は、コホート調査による疾病負荷研究は迅速世帯調査を踏まえて実施されることが想定されていたが、引き続いて実施されるコホート研究のプロトコルの細部に係る関係者間の協議や、審査委員会（Institutional Review Board：IRB）による倫理審査、コホート研究実施に必要な MOA の締結にも一定の時間を要したが、中間レビュー時点では、これまで得られている病因分析結果及び迅速調査の結果を踏まえてコホート調査の実施プロトコルが作成されている。

成果 2 の達成度を以下に示す。

[7] 死亡や罹病についての情報を収集する聞き取り調査手法。WHO は口頭剖検用に 3 つの年齢区域（生後 4 週未満、4 週以上 14 歳未満、14 歳以上）に対して質問票を作成している。

成果 2：選定されたサイトで小児肺炎による疾病負荷が測定される。	
指標 OVIs	達成度
2-1. 小児重症肺炎と小児肺炎による死亡の発生率を少なくとも 2 カ所のコミュニティで測定する。	・コホート研究のデザイン・方法論の実現可能性及びコホート・サイトの選定を目的とした事前調査によって、ビリラン州全体の世帯状況・経済状況・肺炎リスク・受療行動を調査し、無作為に選択したサイトの 6 歳未満人口 5,335 名のうち 842 例の肺炎疑い症例を確認した。過去 1 年間の罹患歴からの肺炎（人/年当たり）及び死亡率を算定した。また、重症肺炎の疾病定義に当てはまった患者のうち最終的に病院を受診できていない患者が 64%おり、そのうち 40%が経済的な理由を挙げている。 ・これら結果に基づき州内の 2 町 25 村をコホート・サイトとして選定し、5 歳未満を対象としたコホート研究への登録が終了したところである（コホートサイズ：約 2,500）。

3) 成果 3

中間レビューまでに、RITM 及び各センチネル・サイトのインターネット環境整備が完了し、ネットワーク環境が整えられた。現在は、病因及び疾病負荷研究から得られるデータを介入研究のためのリスク因子解析に利用できるようなシステムを構築中である。同様に、各センチネル病院及びフィールドから得られるデータを用いたプロジェクトのモニタリング及びサーベイランスを目的としたアウトプットシステム構築も進めている。

他方、上述した要因によりコホート調査の開始が大きく遅延したことから、中間レビュー時点で十分なエビデンスを有する小児重症肺炎のリスク因子の同定には至っていないものの、死亡例の患者情報解析など予備的な解析は既に開始されている。プロジェクトでは残りのプロジェクト期間を考慮し、これまで得られている病因分析や迅速調査の分析結果を基に、コホート調査を準備し、2013 年 11 月頃からの実施をめざしている。

成果 3 の達成度を以下に示す。

成果 3：小児の重症肺炎のリスク因子が同定される。	
指標 OVIs	達成度
3-1. 重症肺炎と死亡のリスク因子、患者側の因子（病因、人口統計等）が調査され、同定される。	・重症化因子の本格的な解析はこれから行われる予定。迅速世帯調査により、重症肺炎の発生率には社会経済的因子が関与している可能性があること、病院への受診の遅れが重症化に関与している可能性があることなどが示されているが、これらは今後コホート研究を通して詳細な解析が行われる予定である。

4) 成果 4

2012 年に実施された地域での迅速世帯調査の結果から、地域の小児肺炎リスク及び受診行動の概要をつかんだ。また、プロジェクトはコホート調査の開始前に一斉世帯調査（センサス）を実施するとともに、地域の 1 次保健医療システムの状況を多角的に評価した。介入研究のデザインは成果 3 で行うリスク因子分析結果に基づいて実施されることが予定されていたが、中間レビュー時点では上述したとおり十分なエビデンスに基づいた介入研究の実施には至っていない。

他方、プロジェクトでは、現在の進捗状況と残りのプロジェクト期間を考慮し、上述した分析結果を基礎的なデザインのためのデータとして利用し、2014 年中の介入研究開始に向けてプロジェクトチームで調査デザイン検討が開始されている。しかしながら、介入研究は可能な限りエビデンスレベルの高いリスク因子分析結果に基づいて実施されることが望ましい。特に、介入効果をより精度高く測定するためには、介入期間について少なくとも肺炎流行 2 シーズンを確保することが必要であることから、プロジェクトは、コホート調査の結果を随時解析することにより介入研究の実施計画を調整し、できるだけ早い時期からの介入研究の実施をめざすこととしている。

成果 4 の達成度を以下に示す。

成果 4：小児肺炎による死亡を減少させるための介入が評価される。	
指標 OVIs	達成度
4-1. 小児肺炎による死亡を減らす結果をもたらすエビデンスが発見される。	・死亡率の低減につながる介入研究を今後実施する予定である。現時点では介入手段として、1) 重症肺炎患者の受診システム（Referral System）の改善、2) 重症化の指標を示すことで早期に重症化の恐れのある患者を同定するアルゴリズムの開発の 2 つを検討している。

5) 成果 5

以下に示す指標の達成度のとおり、研究成果の共有のための年次報告会、対象サイトでのフィードバックフォーラムも開催されている。また、これまでの研究成果も国際誌に 2 件発表し、国内外の学会発表もなされている。今後も、コホート調査や介入研究の結果を基に、多くの学術論文の発表や学会発表も期待される。

他方、改善介入パッケージの開発はプロジェクトの最終年に予定されており、中間レビュー時点での成果確認には該当しない。しかしながら、上述してきたとおりパッケージ開発に向けた重症化リスク因子の同定と、それに基づいた介入研究の開始が遅延していることから、プロジェクト期間終了までに介入パッケージ開発や政策提言が着実に実施できるよう、中間レビュー以降のプロジェクト活動の詳細な計画が求められる。

成果 5 の達成度を以下に示す。

成果 5：小児肺炎対策戦略の改善・刷新のため、研究成果が発表される。	
指標 OVIs	達成度
5-1. 国、地方の関係者に推薦するための、改善版介入パッケージが開発される。	・RITM 内において年次報告会を 2 回開催した。また、レイテ州タクロバン及びビリラン州ナバルにおいてフィードバックフォーラムを各 1 回開催した。その他の実績を以下にまとめ記載する。 ・原著論文発表〔国内（和文）誌 0 件、国際（欧文）誌 2 件〕 ・国際学会発表及び主要な国内学会発表 ・招待講演（国内会議 2 件、国際会議 3 件） ・口頭発表（国内会議 2 件、国際会議 3 件） ・ポスター発表（国内会議　0 件、国際会議 9 件）

(3) プロジェクト目標の達成度

「成果の達成度」で示したとおり、これまでにセンチネル・サイトで得られた小児肺炎患者からウイルス同定及び遺伝子学的解析結果等の個別のエビデンスが得られているものの、プロジェクト全体の進捗としては約 1 年の遅延が確認されている。これに伴い、本プロジェクトで最も重要なエビデンスに基づいた介入研究に関してもプロジェクト期間内で確保できる介入期間が制限される可能性が高い状況である。

これに対してプロジェクトは、より効率的な研究活動に向けて中間レビュー以降のプロジェクト活動計画を練り直し、プロジェクト期間内にできるだけ高いエビデンスを得るために取り組みを強化している段階である。

プロジェクト目標：小児肺炎の病因、疾病負荷、リスク因子が明らかになり、小児肺炎による死亡を低減させるための有効な介入が確認される。	
指標 OVIs	達成度
1. 適切な方法（研究デザイン、サンプルサイズ、研究の前提、分析方法）を通した小児肺炎の予防・制御に関して得られた新たなエビデンス	・中間レビュー時点において、プロジェクトは肺炎の重症化を抑制する介入について項目や方法、効果測定の指標等の検討を介した段階である。これらは、コホート調査をすすめながら、その結果を逐次介入研究のデザインに反映させていく予定である。 ・迅速調査に基づいた現時点で想定している介入ターゲットは、病院とコミュニティの介在点となる RHU であり、そのレベルにおける早期発見、早期治療、早期上位機関紹介を主眼とした介入プランを検討している。また、コミュニティレベルの公衆衛生教育的な介入も検討している。

３－３　実施プロセスの検証

(1) プロジェクト活動の進捗

これまで述べてきたとおり、全体的なプロジェクトの進捗は 1 年程度の遅れが生じている。具体的には、詳細計画策定調査時点の計画では、2011 年 1 月に討議議事録（Record of Discussions : R/D）締結、2 月にプロジェクト開始、及び調整員の派遣という計画であったが、実際は 2011 年 3 月に R/D 締結、4 月にプロジェクト開始、9 月に調整員の派遣となった（R/D 上の調整員派遣予定は 10 月）。研究に必要な機器等の調達、導入はプロジェクト開始直後から始められていたが、その後、BPH 及び ONP のラボの整備や停電対策用ジェネレーターの配線工事に遅れが生じた。現在 BPH のジェネレーターは稼働しているが、ONP については 2013 年 11 月以降に稼働予定である。これにより、地方サイトにおける細菌培養検査に支障が生じた。このほか、倫理委員会の承認やビリランでの研究全体の MOA 締結の遅れもあり、結果として、2013 年開始予定であった介入研究に遅れが生じている。

これに対しプロジェクトは、可能な限りエビデンスレベルを損なわないよう中間レビュー以降の研究活動の実施計画の変更を検討している。当初はプロジェクト期間の最終年は最終的な分析や論文作成、改善介入パッケージや政策提言の準備を行うことを想定していたが、できるだけ介入研究の実施期間を長く確保するために、最終年もこれらの活動と並行して介入研究を継続することを想定している。これに伴い、最終年に実施する介入研究に必要な人

員、予算措置を計画する必要があることから、人員、予算の年度配分を変更するなども考慮した綿密な実施計画作成が求められる。また、介入研究の実施に必要な倫理委員会からの承認にも一定の時間を要することが想定されることから、この期間も十分考慮に入れた計画づくりがなされることが望ましい。

(2) プロジェクトマネジメントと関係者間のコミュニケーション

上述のとおり、プロジェクト実施の遅延は生じているものの、プロジェクトの活動自体には変更はなく、研究活動は 2011 年 2 月に合意された PDM（Version 1）に基づいて実施、管理されている。研究活動を含むプロジェクト全体のモニタリング活動として、これまでに 3 回の JCC が開催され、関係者間で研究成果及びプロジェクト運営に関する協議がなされている。また、地方サイトのラボのモニタリングは RITM と JICA 専門家によりおおむね月 1 回の頻度で実施しており、実際にラボを訪問して運営管理上のモニタリングだけでなく技術的な監督指導も実施している。検体収集の状況や各種試験結果等の研究成果に係る情報は RITM と JICA 専門家が共同で作成する週報により関係者に共有されている。

プロジェクト活動費のフィリピン側負担事項は、R/D で合意されていたが、プロジェクト開始当初は具体的なフィリピン側経費負担に関する日本側とフィリピン側の認識にずれが生じており、その調整に一定の時間と労力を要した。しかしながら、中間レビュー時点では双方おおむね認識が共有されており、本プロジェクトに係るコミュニケーション上の問題はおおむね解決している。

このように、実施の遅延がありながらも、「進捗モニタリング」の観点では中間レビューまでおおむね適切なマネジメント、コミュニケーションが維持されてきた。本プロジェクトのデザインは、病因研究（成果 1）と疾病負荷研究（成果 2）をインタラクティブに並行実施し、それらの結果を用いて重症化因子を同定し（成果 3)、介入研究の実施（成果 4）とつながっていくものである。したがって、ある過程に遅延が生じた場合は、全体的なプロジェクトの進捗にも影響が及ぼされるものである。上述の遅延が生じた際には、プロジェクトや JICA を含む関係機関は各問題については適宜対策について協議を行ってきたが、中間レビューで約 1 年の遅延を生じる結果となっていることから、大きな遅延が危惧された時点で運営指導調査の実施などより強力な全体計画の見直しを行う必要があったものと考えられ、プロジェクトだけでなく、JICA 等の関係機関による全体的な運営管理には「進捗管理」上の問題が一定程度あったものと示唆される。

(3) オーナーシップ及び自立性

RITM は共同研究の実施に強いオーナーシップを示し、RITM で実施される研究活動を行ってきた。特に、迅速調査やコホート研究のプロトコル作成には主体的に関与している。センチネル・サイトでの細菌学的検査についても RITM が主体的に実施しており、JICA 専門家は側面支援に徹している。

第４章　評価結果

４－１　妥当性

以下に示す理由から、プロジェクトの妥当性は中間レビュー時点でも高く維持されている。

(1) フィリピンにおける保健政策及びターゲットグループのニーズとプロジェクト目標の一致性

2010 年 12 月に実施された事前評価で確認されたフィリピン保健政策及びターゲットグループのニーズとプロジェクト目標の一致性に関して、本プロジェクトの妥当性を損ねるような政策の変更やニーズの変化等は認められず、その一致性は中間レビュー時点においても維持されている。

(2) 日本の援助方針とプロジェクト目標の一致

同様に、事前評価で確認された日本の援助方針とプロジェクト目標の一致性に関しても、本プロジェクトの妥当性を損ねるような援助方針の変更等は実施されておらず、その一致性は中間レビュー時点においても維持されている。

(3) 実施方法の適切性

1) センチネル・サイトでの細菌学的検査を含むプロジェクト活動の実施にプロジェクトが現地人スタッフを雇用したことの論理的根拠

一般的な技術協力プロジェクトでは、人材育成の観点からプロジェクト活動を行う人材は相手国側によって配置される。他方、本プロジェクトでは 4 つのセンチネル・サイトで日常的に非常に多くの検体を収集し、細菌学的検査や他の詳細な解析のための検体前処理と移送を継続的に実施することに加え、迅速調査などのコミュニティでの比較的大きな規模の調査を実施している。特に中間レビュー以降に予定されているコホート調査及び介入研究では、これまでに 2 市町村 2,612 名の 5 歳未満の子どもが追跡調査の対象者として登録されており、今後約 2 年にわたって呼吸器感染症の発生や受療行動、生活環境等が追跡される。このような調査活動の実施には日常業務を有する現地の医療従事者を投入することは不可能であり、調査専門のスタッフを雇上することが必須であることから、プロジェクト活動の実施にプロジェクトが専門のスタッフを雇用することの論理的根拠は得られている。

ただし、特に BPH、ONP ではプロジェクト開始まで施設内で細菌学的検査を実施することができていなかったが、プロジェクトの支援により細菌学的検査を実施するラボが整備され、トレーニングを受けたプロジェクト雇用スタッフが細菌学的検査を担当している。今後はプロジェクト期間終了後に細菌学的検査が通常の検査サービスとして継続されるよう、同院のラボスタッフに検査技術を移転していくとともに、機器等の維持管理方法、RITM による品質認証・監査等について関係者間と協議することが望まれる。

2) ジェンダーや民族、社会的階層、環境等に対する配慮

本プロジェクトでは感染性物質を取り扱うため、人体や環境への影響が危惧されるが、実験操作は各施設のバイオセーフティ規制に基づいて実施されている。また、実験操作に

ついても、本プロジェクトを通じて整備された SOP に基づいて実施されることとされており、人体または環境への安全配慮が適切になされている。

４－２　有効性

以下の理由から、中間レビュー時点でのプロジェクトの有効性は中程度である。

(1) プロジェクト目標の達成見込み

「３－２　プロジェクトの実績」でも述べたとおり、ウイルス学的病因研究はおおむね順調に進捗しており、いくつかのエビデンスも得られているが、細菌学的研究に関しては、地方病院の検査施設環境整備の遅れにより、参考情報としてのいくつかの知見は得られているものの、詳細な研究は十分に実施できていない状況である。また、フィリピン側倫理委員会のコホート調査承認手続きに長時間を要したことから、中間レビュー時点において当初予定から全体的に 1 年程度の遅延が発生しているため、コミュニティでの小児肺炎の重症化リスク因子分析と、分析結果に基づいた介入方法の決定等、中間レビュー時点で予定された研究成果は得られていない。

しかしながら、病因研究や迅速調査等で対象地域での肺炎の原因病原体やリスク因子の概要はおおむね把握できている。中間レビュー以降、直ちにコホート調査が開始される予定であるが、プロジェクトはコホート調査と並行して前述の調査結果等に基づいて介入方法の具体的な検討を開始し、コホート調査の結果を随時確認しながら介入方法の最終化を行うことで、残りのプロジェクト期間で得られるエビデンスレベルを損なわないよう効率的な活動の実施を計画している。このような実施計画が予定どおり進捗すれば小児肺炎の発生や重症化を抑制する介入に関するエビデンスを示すことができる可能性は一定程度あるものと考えられる。そのためには、人員や予算も含めて投入計画を入念に検討するとともに、倫理委員会の承認手続きに必要な期間等も考慮した綿密な実施計画の作成と関係者間の情報共有（共通認識）が求められる。特に、精度の高い介入効果の評価を行うには、少なくとも肺炎流行 2 シーズンの介入を行うことが望ましく、中間レビュー以降、可能な限り早い時期からコホート調査を開始する必要がある。

他方、「成果 1　病因研究の達成度」でも示したとおり、全体的に細菌の検出率は低い。これに対し、プロジェクトは、約 40％の患児が何らかの理由により抗生物質の事前投与を受けており、採取された血液中からの細菌分離に一定の影響を及ぼしている可能性を明らかにした。プロジェクトは、PCR を用いた細菌の同定をいくつかの検体に実施しているが、そこで細菌の存在が確認された結果は数％程度である。そもそも、患児から採血できる検体量は限られており、小児からは喀痰を採取することが困難な場合も多いことから、小児肺炎疑い患者からの細菌学的検査は技術的に困難な側面を有している。他方、ウイルス学的検査では、肺炎症状を呈する患児の呼吸器検体から RS ウイルスが約 30％検出されている。このことから、中間レビューまでに、肺炎症状を呈する患児の原因として RS ウイルスを中心としたウイルス性肺炎の重要性が強く示唆されたとの知見が得られている。原因病原体同定による確定診断が困難な地方部では特に、症候的診断によって抗生物質投与が治療の第一選択となる場合が多く、この結果は今後のフィリピンにおける小児肺炎治療に大きく貢献するものと考えられる。したがって、今後、現在の知見の高いエビデンスが得られるよう、更なる分析が

行われることが望まれる。

C/P への技術移転に関しては、これまでに多くの研究・診断技術が移転され、中間レビュー時点で移転された技術を自立的に維持できるレベルに到達している。特に、ウイルス学的検査技術に関して、hMPV や C 型インフルエンザウイルス、EV68 がフィリピンで初めて分離されたなど、国家リファレンスラボ機能向上との側面でも技術移転の成果が確認されている。細菌学的検査についても、プロジェクトは 2 つのセンチネル・サイトで百日咳菌、マイコプラズマなどの非定型の細菌検出のための分子診断技術を促進・支援してきた。疫学的解析技術に関しても、空間解析技術など高度な疫学分析が可能となっている。RS ウイルス及び EV68 の分離と解析に関する研究結果が国際誌にそれぞれ掲載[8]されたり、国内外での招待講演、口頭発表、ポスター発表も数多く行われたりと、研究成果に関しても一定の成果が認められている。表－２に移転された技術の要約を示す。

表－２　移転された技術

部　門	技　術	結　果
ウイルス学部門	適切な検体輸送（新しい輸送培地の導入）	RS ウイルス等のウイルスの検出率向上
	ウイルス分離同定（マイクロプレート法）	ヒトメタニューモウイルスの分離（フィリピン初）
		C 型インフルエンザウイルスの分離（フィリピン初）
		エンテロウイルス（EV）68 の分離（フィリピン初）
分子生物学部門	遺伝子同定方法	RITM 内で病原体の塩基配列の同定
	遺伝子解析方法	検出された EV の遺伝子シークエンスによる同定
細菌学部門	非定型肺炎の原因病原体の分離	臨床検体からの病原体分離システムの確立
	非定型肺炎の原因病原体の検出	非定型肺炎病原体の PCR による検出
疫学生物統計学部門	小児肺炎に関する空間解析	迅速世帯調査の空間解析の実施（今後のコホート調査で、その技術が利用される）
	疾病負荷調査のデータ解析	疾病負荷データの解析手法（今後施行されるコホート調査でその技術が生かされる）
4 センチネル・サイト病院の細菌検査室	細菌学的検査の導入	細菌培養システムの確立
		細菌学検査（染色、薬剤感受性テスト）の導入

(2) 成果及びプロジェクト目標達成のための外部条件

1) 成果達成のための外部条件「病院、地方政府からの支援が得られる」の現状

病因研究や迅速世帯調査などのフィールド調査活動に病院や地方政府の協力が得られており、本外部条件は中間レビューまでに満たされた。

2) プロジェクト目標達成のための外部条件「小児肺炎がフィリピンの主要な公衆衛生問題として位置づけられている」の現状

フィリピンにおける小児肺炎は政策的にも対策の重要性が維持されていることから、本外部条件は中間レビューまでに満たされた。

[8] EV68 に関する論文は、中間レビュー時点で in press の状態である。

(3) 有効性への促進要因

中間レビューまでに、有効性への促進要因は特に観察されない。

(4) 有効性に対する阻害要因

これまで示してきたような内外の遅延要因は、プロジェクトの成果創出に大きな負の影響を及ぼしており、有効性に対する阻害要因として整理される。

４－３　効率性

いくつかの内外の要因により研究活動の円滑な実施に負の影響が生じたため、プロジェクトの効率性は中程度である。

(1) プロジェクト活動の進捗管理

「実施プロセスの検証」で示したとおり、業務調整員の赴任がプロジェクト開始後 5 カ月後となり、プロジェクトによるスタッフ雇用プロセスが遅れたことや、地方サイトにおける停電対策用ジェネレーター配線工事の遅れ、プロジェクト内でのフィールド調査デザイン/内容にかかわる協議、施設内倫理委員会からの研究承認、研究実施にかかわる MOA 署名等の影響により、中間レビュー時点においてプロジェクトの研究活動がおおむね 1 年遅延している。それぞれの問題が生じた段階では適宜関係者間で対応策について協議されており、研究成果や進捗に関する関係者間の情報交換は定期的に行われたことから、進捗のモニタリングとしてはおおむね適切に実施されてきたと考えられる。しかしながら、結果的に中間レビュー時点でプロジェクト活動の大きな遅れが生じていることから、プロジェクトだけでなく JICA 等の外部関係者も交えて遅延回避に向けたより強力な対応をタイムリーに実施する必要があったものと考えられる。

「有効性」の項で示したとおり、プロジェクトでは可能な限りエビデンスレベルを損なわないよう中間レビュー以降の研究活動の実施計画の変更を検討している。それに伴い、いくつかの研究要素がオーバーラップして実施され、人員や予算の配分を変更する必要性もあることから、より綿密なプロジェクト活動の工程管理が求められる。

(2) 提供された機器及び材料の有効利用

中間レビューまでに、予定された研究機器の整備はおおむね終了している。供与された研究機器の多くは研究活動実施に有効に利用されているが、ONP と BPH の細菌検査は停電時の電源確保のためのジェネレーター据え付けに想定以上の時間を要し、本格稼働までに時間を要している。しかしながら、BPH では 2013 年 5 月に設置工事が終了した。ONP でも 5 月に設置されたものの配線工事が先方の予算不足で実施できず日本側の支援が必要になり、その仕様検討、予算措置、調達手続き等のため時間がかかっているが 11 月には完了する見込みであり、今後の細菌検査が加速されることが期待できる。

(3) 本邦研修で獲得した知識・技能の有効利用

2012 年度までに延べ 4 名のフィリピン人研究者が本邦研修に派遣され、疫学研究や呼吸器感染症の原因病原体の分離、解析に関して多くの技術移転がなされ、プロジェクトの研究活

動に生かされている。特に、hMPV や C 型インフルエンザウイルス、EV68 がフィリピンで初めて同定されるなど、本邦研修が RITM の検査診断機能強化に大きく貢献した。

(4) 外部リソースとの連携

プロジェクトは RITM にマイクロプレート法を用いたウイルス分離法を導入したが、その同定まではできなかった。その後、RITM より 1 名の研究者が本邦研修の機会に仙台医療センター・ウイルスセンターでウイルス同定法を習得した。研修員は帰国後、RITM において同センターで習得した技術を活用し、ウイルスの同定を行っている。また、プロジェクトで行う研修モジュールの作成に協力している。

Tanauan RHU に配属されている青年海外協力隊員はビリランのフィールド事務所でセンサスの実施支援を行った。

(5) 効率性に対する促進要因

プロジェクト雇用スタッフによる迅速世帯調査やセンサスの実施の際に、RHU 及びバランガイヘルスワーカー（村落の保健普及ボランティア）は管轄地域の世帯情報を提供したり、遠隔地域でもインタビュー調査に同行したりとフィールド活動の実施に協力しており、正確かつ迅速な調査の実施に大きく貢献したことから、本プロジェクトは効率性に対する促進要因として整理される。

(6) 効率性に対する阻害要因

これまで示してきたような内外の遅延要因は、プロジェクトの円滑な実施に大きな負の影響を及ぼしており、効率性に対する阻害要因として整理される。

４－４　インパクト

プロジェクトの実施によって、以下に示す正のインパクトが確認または期待されている。

(1) 上位目標達成の可能性

本プロジェクトは、「小児肺炎に起因する死亡率の低下」を上位目標として設定している。この実現のためには、本プロジェクトで小児肺炎による死亡率を低下させるための有効な介入が確認され、それが保健省によってフィリピンの感染症対策に活用されることが必要である。しかしながら、中間レビュー時点ではコホート調査が始まるところであり、介入研究の実施はプロジェクトの終盤に予定されている。また、プロジェクトで提示する介入が保健省に採用されるか否かについては、それがどの程度のエビデンスレベルを有し、かつ、実現可能性のあるものであるかに依存するものである。したがって、中間レビュー時点で上位目標の達成見込みを推定することは困難である。

別の言い方をすれば、上位目標の達成には小児肺炎による死亡率低下に有効かつ実現可能性のある介入である必要がある。これまで述べてきたとおり、中間レビュー時点ではプロジェクト活動の進捗が大きく遅延しており、中間レビュー以降の活動を効率的に実施し、可能な限り高いエビデンスレベル、実現可能性が得られるかが鍵となる。

他方、「有効性」の項で示したとおり、フィリピンの小児肺炎におけるウイルス感染症の

重要性など、これまでにも小児肺炎に対する科学的知見はいくつか得られている。プロジェクトの目標としては肺炎の重症化を抑制する介入のエビデンスを得ることが達成指標として想定されるが、コホート調査や介入研究で得られるデータセットの多角的な分析を行うことによって、多くの個別のエビデンスがプロジェクト期間終了後まで得られることが期待できる。

(2) その他の正のインパクト

1) RITM の検査診断機能強化

本プロジェクトの研究活動を通じて、RITM に多くの新たな検査診断技術が移転された。このことにより RITM で多くの細菌学的、ウイルス学的検査、診断、解析が可能となっていることから、国家リファレンスラボとしての機能強化も図られている。

2) ONP 及び BPH での細菌学的検査サービス

ONP と BPH では、プロジェクト開始まで施設内で細菌学的検査サービスが実施できていなかったが、プロジェクトによって両施設でジェネレーターを含む細菌学的診断に必要なラボ設備が整備される。プロジェクト期間内はプロジェクト雇用スタッフが細菌検査を行っているが、プロジェクト期間終了後は、各病院に譲渡される予定である。プロジェクト期間終了後にラボ設備のメンテナンスが両施設によって継続され、病院のラボスタッフが細菌学的検査技術を獲得すれば、両施設の検査診断機能強化への正のインパクトが期待できる。なお、小児に対する細菌学的診断では検査そのものの難しさや抗生物質の事前投与などの複合的要因によって分離率は低いが、成人患者から得られる検体（血液、喀痰、便など）の培養検査には技術的に問題なく活用できる。

3) 小児肺炎に対する治療

フィリピンの特に地方部では呼吸器感染症の検査、診断機能を備えていない病院も多く、多くの場合は、小児疾患の診断・治療指針である「小児包括的管理指針（Integrated Management of Childhood Illness : IMCI）」に沿って臨床的に肺炎と診断された患児に対して特定の抗生物質の投与が行われている。しかしながら、本プロジェクトのこれまでの研究成果から、臨床的に肺炎と診断された患児から得られた検体の 40%以上でウイルスが検出されている（RS ウイルスの検出率は約 30%）。これにより、プロジェクトは小児肺炎にウイルス感染が大きく寄与していることを見出した。ウイルスには抗生物質は無効であることから、適切な治療の遅れによる重症化のリスクとなる可能性がある。プロジェクトでは発症早期に臨床症状や限られた検査結果から病原体を絞り込めるような診断システムの構築（アルゴリズム開発）を介入の 1 つとして想定しているが、地域の肺炎原因病原体の発生状況や耐性菌の出現状況を踏まえ、治療方法を最適化できれば、早期治療、死亡率の低下に正のインパクトを及ぼすものと期待できる。

4) 他の開発途上国への研究成果の応用

研究成果、特にコミュニティにおける疾病負荷研究で得られる成果は、フィリピン国内全体に適用できるだけでなく、他の多くの途上国にも応用可能なものであり、途上国全体の小児の急性呼吸器感染症対策に貢献できるような知見を提供できるものと期待される。したがって、プロジェクトでは、実際の対策の向上に向けて、研究成果をフィリピン保健省、WHO、UNICEF 等にも提供していく予定である。

(3) その他の負のインパクト

本プロジェクトの実施に起因する負のインパクトは、中間レビュー時において確認されない。

４－５　持続性

プロジェクトによって生み出された便益の自立発展、自己展開は中間レビュー時点においても一定程度見込まれる。

(1) 政策的、制度的側面

妥当性の項でも示したとおり、フィリピンにおける小児肺炎対策の政策的重要性は維持されており、本プロジェクト終了後も継続することが見込まれる。

他方、本プロジェクトではその目標として小児肺炎による死亡を低下させるための有効な介入に関するエビデンスを得ることである。この成果を基に、本プロジェクトは将来的に実際の小児肺炎に起因する死亡率の低下を上位目標として設定している。このためには、本プロジェクトで得られた介入方法が実際にフィリピンの小児肺炎対策に取り入れられることが必要である。当然、対策として取り入れられるためには、得られた成果（介入）の有効性や実現可能性がどの程度であるかに左右されるが、プロジェクト期間終了後、成果をどのように活用していくか、プロジェクトは保健省等の関係機関と協議を開始することが望ましい。

(2) 財政的側面

上述のとおり、本プロジェクトでは小児肺炎による死亡を低下させる有効な介入を確認することをプロジェクト目標としている。将来的には介入が政策的に利用されることが期待されるが、実際に特定の介入方法を導入することとなった場合を念頭において、保健省等に提示する改善介入パッケージには介入の運用ガイドだけでなく、必要な資機材や人員等のコスト分析等も含められることが望ましい。

他方、プロジェクト期間中の細菌学的検査はプロジェクトのデータ取得のために実施されていることから、ラボ設備の維持や検査作業の経費はプロジェクトにより賄われている。しかしながら、プロジェクト期間終了後は各病院の検査診断サービスに使用されることが期待されることから、各病院は細菌検査機能の維持（設備維持費を含む）についてプロジェクトや地方自治体ユニット（LGU)、保健省地方事務局（Center for Health Department : CHD）などの関係機関と予め協議しておくことが望ましい。同様に、RITM では導入された機器等が高額なものが多く、品目数も多いことから、適切な維持が必要な品目や検査内容に関しては予め必要な準備（維持費や試薬、消耗品の調達方法）について関係者間で協議しておくことが求められる。

(3) 技術的側面

本プロジェクトを通して中間レビュー時点で既に原因ウイルスの分離など高度な診断技術は RITM に移転されており、hMPV、C 型インフルエンザウイルス、EV 68 がフィリピンで初めて分離されるなどの成果も既に確認されている。4 つのセンチネル・サイトのラボについても細菌学的検査に必要なラボ施設整備が行われた。現状としてさまざまな要因により細

菌の分離率は低いものの、細菌学的検査の実施体制自体はおおむね確立されている。プロジェクト、特にワーキング A（病院検査室グループ）は、細菌学的病因研究について、明確な方向性を示すことが求められる。なお、プロジェクト期間終了後は、プロジェクトで整備した細菌学的検査設備、技術は通常の検査診断サービスに使用されることが期待されることから、プロジェクト期間終了までに病院ラボスタッフは細菌学的検査技術を獲得しておくよう配慮が必要である。

上述のとおり、RITM は原因病原体の分離、同定の技術は既に獲得している。これに加えて、RITM はコホート調査などのフィールド調査のノウハウ、経験を既に有している。中間レビュー以降はコホート調査と介入研究が予定されており、これらの調査活動を通じて RITM、JICA 専門家（研究者）の技術は一層強化されることが見込まれる。技術的持続性向上には、JICA 専門家（研究者）及び RITM がコホート研究の実施管理、分析作業に協力して取り組むことが期待される。

(4) 総合的持続性

中間レビュー時点では本プロジェクトの持続性を正確に推測することは困難であるが、以上に示した理由により、プロジェクト期間終了までに本プロジェクトの持続性が担保されることは一定程度見込まれる。

４－６　結論

既に原因病原体の分離、同定など高度な診断技術が RITM へ移転されており、小児肺炎におけるウイルス感染症の重要性など、フィリピンの小児肺炎に対する科学的知見はいくつか得られている。今後予定されているコホート調査や介入研究で得られるデータセットは多角的な分析を行うことによって、多くの個別のエビデンスがプロジェクト期間終了後まで得られることが期待できる。

しかしながら、病因研究やコミュニティレベルでの疾病負荷、肺炎重症化のリスク因子分析は約 1 年の遅延が確認されており、これに伴い、エビデンスに基づいた介入研究に関してもプロジェクト期間内で確保できる介入期間が制限される可能性が高く、プロジェクトの目標である肺炎の重要化を抑制する介入のエビデンスを得ることが達成できるかを現時点で予測することは難しい。

残り期間内で所定の目標を達成するためには、段階を追って進める予定であった研究を一定程度同時並行的に行うよう詳細計画を見直し、関係者間での協力による入念な準備を開始するとともに、問題事項への対処を関係者で協力して取り組む進捗管理が必要である。また、データの解析を日本・フィリピン国側双方の研究者の共同作業により行うことにより双方の能力を高め、フィリピン保健省や関連ドナーにしっかり発信していくことが重要である。

第５章　提言と教訓

５－１　提言

(1) プロジェクト、ONP、JICA は、ONP の細菌検査結果が科学的根拠として使えるようにするために、ジェネレーター配線工事を一刻も早く完了すべきである。

(2) 病因研究における細菌検査の今後の方向性について、ワーキンググループ A（病因研究）を中心に、プロジェクトは予算の制約等を考慮しながら、取り組みの度合いを検討すべきである。

(3) プロジェクトは保健省等に対して、介入方法のみならず、モニタリング方法、必要な資機材、コストも含めた、実現可能性を含めた形で介入パッケージを提示すべきである。

(4) プロジェクトは、介入研究のアプローチを検討するにあたり、想定されている介入にかかわっている関係者からより積極的に情報収集し、決定にあたり、保健省と十分協議すべきである。JICA は、母子保健事業の関係者等との意見交換を促進すべきである。

(5) プロジェクトは、2 カ年にわたる各年の肺炎流行シーズンをとらえた介入研究をいち早く行う以下の対応を行うべきである。
・より詳細な工程表の作成（2013 年 10 月まで）
・関係者への工程表の共有と実施
・コホート調査の迅速な実施
・コホート調査を踏まえた介入研究デザインの必要に応じた見直し

(6) プロジェクトは投入の適切な配分について、研究活動の優先性や JICA 専門家の業務内容等を考慮しつつ検討すべきである。

(7) RITM はフィリピン側関係者及び JICA 専門家らと協議のうえ、プロジェクト終了後の RITM 及びセンチネル・サイトへ供与した機材の活用について、2014 年 3 月までに計画すべきである。

(8) プロジェクトは調査団が提案した PDM 改訂案について、プロジェクトの残りの期間の活動工程が決定次第、改訂し、2014 年 4 月ころに予定されている JCC で承認を得るべきである。

５－２　教訓

(1) 本プロジェクトのデザインは、病因研究（成果１）と疾病負荷研究（成果 2）をインタラクティブに並行実施し、それらの結果を用いて重症化因子を同定し（成果 3)、介入研究の実施（成果 4）とつながっていくものである。したがって、ある過程に遅延が生じた場合は、全体的なプロジェクトの進捗にも影響が及ぼされるものである。特定の活動に遅延が生じた

際にはプロジェクトは各問題について JICA を含む関係機関と適宜対策について協議を行ってきたが、結果として中間レビューで約 1 年の遅延を生じる結果となった。

このように、プロジェクト目標達成に向けて成果が直列的につながっているようなプロジェクトデザインとなっている場合は、プロジェクト活動で 1 つの過程が滞ったことにより全体の進捗が阻害される可能性があるため、大きな遅延が危惧された場合は、問題解決に向けてできるだけ早い対応を行う必要がある。

(2) 排気・空調等付帯設備が必要な機材の供与や検査室設置にあたり工事が発生する場合など、研究者・業務調整員・JICA 事務所だけでは対応できない専門技術的な事項があるので、日本人コンサルタントを設計段階で派遣し問題を事前に確認することが必要である。

第６章　所感

６－１　団長所感

本プロジェクトは、小児の主要な死因や疾病負荷である小児肺炎の実態を明らかにし、世界・フィリピンで指針とされている対策や治療方法について、科学的な根拠を踏まえて政策提言しようという野心的な研究である。母子保健、急性呼吸器感染対策（CARI）、小児疾病の統合的管理（IMCI）、栄養対策、予防接種など、保健省の柱となっている各種プログラムの今後の戦略づくりに参考となり得るさまざまな情報を提供でき得る可能性を秘めている一方、どのような知見がプロジェクト終了時に生み出されるか現時点においても明確に想定できないという難しさも抱えている。

多様な原因の積み重ねの結果、現時点で 1 年の遅れが生じている。例えば、業務調整員の派遣が詳細計画時の見込みから 5 カ月ずれたことによる、プロジェクト立ち上げの際の調整不足、現場の課題を的確に認識し関係者で抜本的な対処を話し合う機会の欠如、AFTM 雇用スタッフの手続きの遅延、研究デザインの承認等に時間を要したこと、地方での検査体制整備に時間を要したことなど。大きな遅延が危惧された場合は、問題解決に向けてできるだけ早い対応を行うべくプロジェクト、フィリピン事務所、本部でしっかり話し合う必要があった。

RITM 側からは①疾病負荷担当の日本人研究者の追加的配置、②低い細菌分離率の原因の探求の必要性と細菌分野の指導の充実、③介入研究の計画策定における保健省の十分な巻き込みの必要性について言及があった。RITM と東北大学の研究者の間では、日常的にデータのモニタリング等が進められているが、①②の対応については議論を詰めていく必要があると思われ、また、今後の介入研究がプロジェクト終了までに終えられるようスケジュールと投入計画を具体的に文書化し関係者で確認しつつ運営していく必要性があり、これらを提言とした。

RITM はあまり影響を受けないようであるが、rationalizing program が保健省で実施されるため、保健省の主要 C/P の変更が想定される。サポーティブな体制ができつつあるなかで残念であるが、今後の介入研究での連携や、知見の反映のために保健省との関係が重要であり、JICA としても意識的に支援していく必要があると思料する。また、JICA としては、ONP のジェネレーター接続工事のモニタリング・支援、スケジュールに基づいた進捗管理への協力と関係者との密なコミュニケーション、東北大学研究者と保健省アドバイザー・母子保健専門家との意見交換の場の促進、想定よりも増大している必要経費の手当ての可否の検討等を行う必要があり、残り 2 年半で成果を出せるよう本部・事務所で十分フォローしていきたい。

付　属　資　料

１．PDM Version 1

２．中間レビューの日程

３．評価グリッド
　３－１　実施プロセスの検証
　３－２　評価 5 項目

４．主要面談者リスト

５．投入実績表
　５－１　フィリピン側研究者及び管理メンバー
　５－２　日本人専門家派遣
　５－３　本邦研修
　５－４　供与機材リスト

６．中間レビュー調査団からの PDM 改定案（Version 2）

７．中間レビューミニッツ

PROJECT DESIGN MATRIX (PDM)

Annex 1

Project Name : Comprehensive Etiological and Epidemiological Study on Acute Respiratory Infections in Children: Providing Evidence for the Prevention and Control of Childhood Pneumonia in the Philippines

Target Area : The Philippines
Target Group: Children under Five Years Old
Duration: April, 2011 to March, 2016 (Five years)

Date : February 14, 2011
PDM Version_1

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions
Overall Objective			
Reduction of mortality due to childhood pneumonia			
Project Purpose			
Etiology, disease burden and risk factors of childhood pneumonia are defined and effective interventions to reduce mortality due to pneumonia in children are validated	1 New evidences obtained for prevention and control of childhood pneumonia through appropriate methods (e.g. study design, sample size, study assumption, analytical methods)	1 Occasional reports, publication in peer-review journals	
Outputs			
1 Etiology of childhood pneumonia and respiratory infections in the selected sites is determined	1-1 Composition of identified bacterial and viral pathogens detected at 4 sentinel sites	1-1 Specimen transport log book, log books for quality control, progress report	1 Childhood pneumonia remains a major public health problem in the country
	1-2 Correlation of identified pathogens and severe pneumonia detected at 4 sentinel sites	1-2 Specimen transport log book, log books for quality control, progress report	
2 Disease burden due to childhood pneumonia is measured in the selected sites	2-1 Incidence of severe disease and deaths due to childhood pneumonia determined in at least 2 communities	2-1 Annual Report	
3 Risk factors for severe pneumonia in children are identified	3-1 Risk factors and host factors for severe pneumonia and deaths (e.g. etiology, demography) assessed and identified	3-1 Annual Report	
4 Interventions to reduce mortality due to childhood pneumonia are evaluated	4-1 List of new evidences / findings gathered from the study that results in reducing mortality from childhood pneumonia	5-2 Material developed or reproduced	
5 Study results presented for modifying /updating strategies for the control of childhood pneumonia	5-1 Improved intervention package is developed to recommend to national and local stakeholders	4-1 Annual Report	

PROJECT DESIGN MATRIX (PDM) **Annex 1**

Activities	Indicators	
<Etiology Studies>		
1-1 To establish appropriate laboratory capacity in the selected government hospitals for etiological studies	1-1 Three selected government hospital laboratories capable of bacterial isolation, identification and antibiotic susceptibility testing of fastidious organisms, i.e. *S. pneumoniae, H. influenzae, and N. meningitides* , causing childhood pneumonia	1 Support from hospitals and local governments is obtained
1-2 To strengthen RITM capacity to detect, identify and analyze etiological agents of childhood pneumonia	1-2-1 Detection rate of bacterial pathogens including atypical bacterial pathogens using molecular techniques compared to the standard methods in bacteriology	
	1-2-2 Detection rate of virological pathogens using molecular techniques compared to the standard methods in virology	
1-3 To establish sentinel sites in the selected primary health facilities for etiological studies	1-3 Eight sentinel sites in primary health care facilities* established for specimen collection from patients of childhood pneumonia	
1-4 To collect and test samples for bacteriological and viral pathogens from children with pneumonia and other respiratory infections	1-4 The number of samples (at least 2,000 per year) collected for bacterial and virological testing	
1-5 To monitor the sample collection and testing at the sentinel sites	1-5 The number of monitoring visits conducted (6 visits to each site a year)	
<Disease Burden Studies>		
2-1 To establish a methodology to measure the incidence of pneumonia and pneumonia-associated deaths	2-1 Study protocols approved by IRBs (of RITM, Tohoku University, EVRMC, ONP, BPH, CHD 4B and CHD 8)	
2-2 To collect and analyze the data to measure the incidence of pneumonia and pneumonia-associated deaths	2-2 Data analyzed in appropriate manner	
<Risk Factors Analysis >		
3-1 To establish and maintain an integrated database	3-1 Database established and maintained	
3-2 To identify risk factors using the data from etiology and disease burden studies	3-1 Statistical analysis conducted	

PROJECT DESIGN MATRIX (PDM) **Annex 1**

<Intervention Studies>		**Pre-conditions**
4-1 To develop methods/protocol for intervention studies to reduce mortality due to childhood pneumonia based on the results of the studies on etiology, disease burden and risk factors	4-1 Study protocols approved by IRBs (of RITM, Tohoku University, and CHD8)	1 Research approvals are obtained from RITM, Tohoku University, EVRMC, ONP, BPH, and CHDs before starting respective research studies
4-2 To work with national and local stakeholders to review current strategies on childhood pneumonia	4-2 Meetings held with national and local stakeholders regarding current strategies before intervention studies	2 Local chief executives are informed of the project 3 Project is endorsed by chief of hospitals.
4-3 To conduct intervention studies in the selected communities	4-3 Intervention studies implemented in the selected communities	
4-4 To work with national and local stakeholders to evaluate new strategies to decrease burden of childhood pneumonia	4-4 Meetings held with national and local stakeholders regarding the findings after intervention studies	
<Dissemination of Study Results>		
5-1 To conduct meetings / workshops to disseminate the study results	5-1 A workshop organized to share and disseminate study results at each sentinel site once a year	
5-2 To disseminate the study results through international conferences and scientific journals	5-2 Study results published in peer-review journals	
5-3 To provide DOH National ARI Control Program with the findings and recommendations for policy formulation	5-3 Meetings held with DOH National ARI Control Program	

* Facilities to be confirmed 4 OPDs (RITM, BPH, ONG, EVRCM) and 4 RHUs

Abbreviation: BHP: Biliran Provincial Hospital, CHD: Center for Health Development, EVRMC: Estern Visayas Regional Medical Center, IRB: Internal Review Board, LPH: Leyte Provincial Hospital, NRL: National Reference Laboratory, RHU: Rural Health Unit, RITM: Research Institute for Tropical Medicine

Input

Japanese Side

1 Dispatch of experts
(1) Chief Adviser
(2) Project Coordinator
(3) Virology
(4) Public Health
(5) Bacteriology
(6) Epidemiology

2 Equipment:
Equipment, reagent and supplies necessary for research activities in the project

3 Training of counterparts in Japan:
Hands-on training on laboratory and epidemiology

Philippine Side

1 Assignment of personnel
(1) Members of researchers' group
(2) Administrative staff

2 Provision of office space

3 Utility charges

4 Cost-sharing for travel expenses for monitoring

２．中間レビューの日程

Annex 2

Schedule for Mid-Term Review for "The Project for Comprehensive Etiological and Epidemiological Study on Acute Respiratory Infections in Children"

Date	Day	Time	Ms. Makimoto (Leader)	Mr. Abe (Cooperation Planning)	Dr. Inoue (Evaluation Analysis)	JST Prof. Kurata	JST Mr. Sato	Venue	Accommodation
September 10, 2013	TUE	AM			NRT(9:35)→MNL(13:15)[JL741]			RITM	Manila
		15:00			Meeting with Project Coordinator and JICA representative			JICA Philippine office	
September 11, 2013	WED	9:30			Meeting with Project Coordinator and experts, Study tourof laboratories			RITM	Manila
		15:00-17:00			Interview to Dr. Coco based on questionnaire, and interview to RITM researchers(WG-A, B, C)			RITM	
September 12, 2013	THU	AM			Manila(11:55)-13:10(Tacloban)[Cebu659] Accompanied by Dr. Tamaki & Ms. Lydia Sombrero				Biliran
		PM			Move to Biliran				
		PM			Observation of Project Lab in BPH and interview to Tohoku univ. contractual staff			BPH	
September 13, 2013	FRI	AM			Interview to Tohoku univ. contractual staff in Biliran Field office			BFO	Manila
		AM			Observation of Kawayan RHU			Kawayan RHU	
		PM			Move to Tacloban				
		PM			Tacloban(18:10)-Manila(19:25)[2P986]				
September 14, 2013	SAT	AM			Drafting an Evaluation Report			Hotel	Ditto.
		19:00			Drafting an Evaluation Report			Hotel	
September 15, 2013	SUN	AM			Drafting an Evaluation Report			Hotel	Ditto.
		PM			Drafting an Evaluation Report			Hotel	
September 16, 2013	MON	AM			Drafting an Evaluation Report			RITM	Ditto.
		PM			Drafting an Evaluation Report			RITM	
September 17, 2013	TUE	AM	NRT(9:35)→MNL(13:15)[JL741]		Drafting an Evaluation Report		NRT(9:35)→MNL(13:15)[JL741]	Hotel	Ditto.
		15:00	Check-in at hotel		Interview to RITM researchers		Check-in at hotel	RITM	
		16:00	Meeting with JICA Coordinator and JICA PP representative about updated mission schedule				Meeting with JICA Coordinator and JICA PP representative about updated mission schedule	JICA Philippine office	
September 18, 2013	WED	AM	Meeting among the mission members				Meeting among the mission members	Hotel	Ditto.
		PM	Meeting among the mission members			NRT(18:10)→MNL(21:50)[JL745]	Meeting among the mission members	Hotel	

September 19, 2013		9:00-9:30	Courtesy visit to Director of RITM			RITM	Ditto.
		9:30-10:30	Observation tour of Lab in RITM			RITM	
		10:30-15:00	Interview to the JICA Experts (Presentation by each research group) Overall Progress of the project (Prof. Oshitani) {Output 1～5] WGA:Hospital Clinical Lab (Dr.Suzuki)[Output 1] WGB:Field Study (Dr.Tamaki)[Output 2] WGC:Data Management (Dr.Suzuki and Dr.Tamaki)[Output 3]			RITM	
September 20, 2013	FRI	08:30-12:00	Research Forum			RITM	Ditto.
		13:00-17:00	Discussion for Evaluation Report draft among the mission members			RITM	
September 21, 2013	SAT	AM	Discussion for Evaluation Report draft among the mission members	MNL(9:00)→NRT(14:30)[JL746]	Discussion for Evaluation Report draft among the mission members	Hotel	Ditto.
		PM	Discussion for Evaluation Report draft among the mission members		Discussion for Evaluation Report draft with JICA Experts	Hotel	
September 22, 2013	SUN	AM	Revision of Evaluation Report draft		MNL(9:00)→NRT(14:30)[JL746]	Hotel	Ditto.
		PM	Revision of Evaluation Report draft			Hotel	
September 23, 2013	MON	9:00	Discussion for Evaluation Report draft with RITM members			RITM	Ditto.
		PM	Revision of Evaluation Report draft			Hotel/RITM	
September 24, 2013	Tue	08:30-10:00	Discussion on Evaluation Report draft with RITM members			RITM	Ditto.
		10:00-12:00	JCC and Signing of MM at DOH			RITM	
		PM	Report to Embassy of Japan			EoJ	
		17:00	Report to JICA Philippine office			JICA Philippine office	
		PM	MNL(21:00)→CGK(23:55)[PR535]				
September 25, 2013	WED	AM	MNL(9:00)→NRT(14:30)[JL746]				

3．評価グリッド

3－1　実施プロセスの検証

【実施プロセスの検証】小児呼吸器感染症の病因解析・疫学に基づく予防・制御に関する研究プロジェクト中間レビュー調査

評価項目	評価設問		判断基準	必要なデータ	情報源	入手手段
	大項目	小項目				
計画達成度	プロジェクト目標の達成見込み	「小児肺炎の病因、疾病負担、リスク要因が明らかになり、小児肺炎による死亡を低減させるための有効な介入が確認される」が、プロジェクト終了までに達成する見込みはあるか	①指標の達成度 ②総合判断	① 各指標の実績 ② 関係者の意見	① プロジェクト報告書類 ② 専門家、C/P	① 資料レビュー ② 質問票 ③ インタビュー
	成果の達成見込み	中間レビュー時の進捗や達成度をかんがみて、成果1:「選定されたサイトで小児肺炎・呼吸器感染症の病因が測定される」が達成する見込みがあるか	指標の達成見込み	① 各指標の実績 ② 関係者の意見	① プロジェクト活動報告書等 ② 専門家、C/P	① 資料レビュー ② 質問票 ③ インタビュー
		中間レビュー時の進捗や達成度をかんがみて、成果2:「選定されたサイトで小児肺炎による疾病負担が測定される」が達成する見込みがあるか		① 各指標の実績 ② 関係者の意見	① プロジェクト活動報告書等 ② 専門家、C/P	① 資料レビュー ② 質問票 ③ インタビュー
		中間レビュー時の進捗や達成度をかんがみて、成果3:「小児の重症肺炎のリスク要因が同定される」が達成する見込みがあるか		① 各指標の実績 ③ 関係者の意見	① プロジェクト活動報告書等 ② 専門家、C/P	① 資料レビュー ② 質問票 ③ インタビュー
		中間レビュー時の進捗や達成度をかんがみて、成果 4:「小児肺炎による死亡を減少させるための介入が評価される」が達成する見込みがあるか		① 各指標の実績 ② 関係者の意見	① プロジェクト活動報告書等 ② 専門家、C/P	① 資料レビュー ② 質問票 ③ インタビュー
		中間レビュー時の進捗や達成度をかんがみて、成果 5:「小児肺炎対策戦略の改善・刷新のため、研究成果が発表される」が達成する見込みがあるか		① 各指標の実績 ② 関係者の意見	① プロジェクト活動報告書等 ② 専門家、C/P	① 資料レビュー ② 質問票 ③ インタビュー
投入実績の確認	日本側投入実績	専門家の投入は計画どおり実施されたか	計画(値)との比較	投入実績	① 投入実績表 ② プロジェクト活動状況表	資料レビュー
		機材供与は計画どおり実施されたか		投入実績(利用・管理状況含む)	① 投入実績表 ② プロジェクト活動報告書	① 資料レビュー ② 直接観察
		本邦/第三国研修は計画どおり実施されたか		研修員受け入れ実績(科目、期間含む)	① 投入実績表 ② プロジェクト活動報告書	資料レビュー
		現地活動費は予定どおり執行されたか		予算と実績	① 投入実績表 ② プロジェクト活動報告書	資料レビュー
	フィリピン側投入実績	C/P の配置はプロジェクト実施のために適切に配置されたか		① 投入実績 ② 関係者の意見	① 投入実績表 ② 専門家、C/P	① 資料レビュー ② インタビュー
		JICA 専門家の執務スペースは適切に確保されたか		投入実績	① 投入実績表 ② 専門家、C/P	① 資料レビュー ② インタビュー
		プロジェクト実施に必要な経費は適切に執行されたか		① 投入実績 ② 関係者の意見	① 投入実績表 ② 専門家、C/P	① 資料レビュー ② インタビュー
実施プロセスの確認	活動実績	活動は計画どおりに実施されたか	計画(値)との比較	活動の実施状況	プロジェクト活動報告書	① 資料レビュー ② 質問票
		PDM はプロジェクト環境に応じて、関係者合意のもと適切にアップデートされてきたか		PDM の変遷と変更理由	合同調整委員会(JCC)議事録等	① 資料レビュー ② 質問票 ③ インタビュー
	技術移転	技術移転の方法に問題はなかったか		技術移転の方法及び内容	① プロジェクト活動報告書 ② 専門家、C/P	① 資料レビュー ② インタビュー
	プロジェクトのマネジメント体制	プロジェクトの進捗モニタリングは誰が、どのように、どのような頻度で実施し、その結果がプロジェクト運営に反映されているか		① 進捗モニタリング方法 ② フィードバック体制	① プロジェクト活動報告書 ② 専門家	① 資料レビュー ② 質問票
		活動の変更、人員の選定等にかかる意思決定はどのようなプロセスでなされているのか		意思決定のプロセス	① プロジェクト活動報告書 ② 専門家	① 資料レビュー ② 質問票
		プロジェクト関係者間のコミュニケーション及び協力関係に問題はなかったか		JCC 及びその他ミーティング開催実績	① プロジェクト活動報告書 ② 関係者の意見	① 資料レビュー ② 質問票
		プロジェクト活動にかかわる情報は C/P ほか関係者と効果的に共有されたか		JCC 及びその他ミーティング開催実績	① プロジェクト活動報告書 ② 関係者の意見	① 資料レビュー ② 質問票
	オーナーシップと自主性	実施機関や C/P、裨益対象者のプロジェクトに対する認識は高いか(関係機関やターゲットグループのプロジェクトへの参加度合いやプロジェクトに対する認識は高いか)		プロジェクトへの意見、貢献度合い、会議等への参加度合い、積極性、期待等	① プロジェクト活動報告書 ② 関係者の意見	① 資料レビュー ② 質問票 ③ インタビュー
	プロジェクト実施上の問題	その他プロジェクトの実施過程で生じている問題はあるか、またその原因は何か		促進要因・阻害要因	① プロジェクト活動報告書 ② 関係者の意見	① 資料レビュー ② 質問票 ③ インタビュー

3－2　評価5項目

【評価5項目】小児呼吸器感染症の病因解析・疫学に基づく予防・制御に関する研究プロジェクト中間レビュー調査

評価項目	評価設問			評価基準	必要なデータ	情報源	入手手段
	大項目	中項目	小項目				
妥当性	優先性	プロジェクトがめざす効果と保健医療及び科学技術開発に関連したフィリピン政策等との整合性		政策等との比較	フィリピンの関連政策等	① フィリピン政策文書 ② 保健省 ③ JICA 専門家、C/P	① 資料レビュー ② インタ ビュー ③ 質問票
		日本の援助政策、JICA国別事業実施計画等との整合性	援助重点課題との関連性	政策等との比較	日本のフィリピンに対する援助重点分野	① 対フィリピン援助政策 ② 国際保健政策	資料レビュー
			JICA 国別援助実施方針との関連性	政策等との比較	保健医療分野の位置づけ	JICA 対フィリピン国別援助実施方針等	資料レビュー
	必要性	ターゲットグループの妥当性	プロジェクト目標とターゲットグループのニーズの一致		① C/P の経験・能力 ② フィリピンにおける対象疾患の現状	① プロジェクト報告書類 ② 専門家、C/P ③ 保健統計資料等	① 資料レビュー ② インタビュー
	方法の適切性	SATREPS の枠組みのなかでの研究デザイン及びアプローチの適切性			研究デザイン及びアプローチ選択に至る経緯	① 事前評価調査報告書等 ② 専門家、C/P	① 資料レビュー ② 質問票 ③ インタビュー
		社会的配慮	ジェンダーや民族、社会的階層に対する配慮の有無		関係者の意見	① 専門家 ② C/P	① 資料レビュー ② 質問票 ③ インタビュー
		日本の研究機関の技術の優位性			研究機関の有する技術、経験	① プロジェクト報告書類 ② 専門家 ③ C/P	① 資料レビュー ② インタビュー
有効性	達成状況	成果の達成状況	活動の実績		プロジェクト活動実績と達成	① プロジェクト報告書類 ② 専門家、C/P	① 資料レビュー ② 質問票 ③ インタビュー
			各成果の指標の達成状況		① 指標の達成状況 ② プロジェクト活動実績と達成	① プロジェクト報告書類 ② 専門家、C/P	① 資料レビュー ② 質問票 ③ インタビュー
			(成果1)肺炎の病因(原因菌/ウイルス等)が明らかとなったか、またはその見込みがあるか		プロジェクト活動対象範囲内の指標以外の成果等	① プロジェクト活動報告書等 ② 専門家、C/P	① 資料レビュー ② インタビュー ③ 質問票 ④ 直接観察
			(成果 2)対象コミュニティでの疾病負荷が明らかとなったか、またはその見込みがあるか		プロジェクト活動対象範囲内の指標以外の成果等	① プロジェクト活動報告書等 ② 専門家、C/P	① 資料レビュー インタビュー ② 質問票 ③ 直接観察
			(成果 3)章に重症肺炎のリスク要因が同定されたか、またはその見込みがあるか		プロジェクト活動対象範囲内の指標以外の成果等	① プロジェクト活動報告書等 ② 専門家、C/P	① 資料レビュー ② インタビュー ③ 質問票 ④ 直接観察
			(成果 4)小児肺炎による死亡を減少させる介入(エビデンス)が同定されたか、またはその見込みがあるか		プロジェクト活動対象範囲内の指標以外の成果等	① プロジェクト活動報告書等 ② 専門家、C/P	① 資料レビュー ② インタビュー ③ 質問票 ④ 直接観察
			(成果 5)小児肺炎対策戦略の改善・刷新に向けた改善版介入パッケージが開発されたか、またはその見込みがあるか		プロジェクト活動対象範囲内の指標以外の成果等	① プロジェクト活動報告書等 ② 専門家、C/P	① 資料レビュー ② インタビュー ③ 質問票 ④ 直接観察
		プロジェクト目標の達成見込み	プロジェクト目標の指標の達成状況		① 指標の達成状況 ② プロジェクト活動実績と達成	① プロジェクト報告書類 ② 専門家、C/P	① 資料レビュー ② 質問票 ③ インタビュー
			プロエジェクト期間終了までに、フィリピンにおける小児肺炎による死亡を軽減するために必要なエビデンス(科学的根拠)が示される見込みがあるか	総合的判断	① 指標の達成状況 ② プロジェクト活動対象範囲内の指標以外の成果等	① プロジェクト活動報告書等 ② 専門家、C/P	① 資料レビュー ② インタビュー ③ 質問票 ④ 直接観察

【評価５項目】小児呼吸器感染症の病因解析・疫学に基づく予防・制御に関する研究プロジェクト中間レビュー調査

評価項目	評価設問			評価基準	必要なデータ	情報源	入手手段
	大項目	中項目	小項目				
			（その他、想定されるプロジェクト目標として）C/P研究機関の研究能力がプロジェクト期間終了までに満足のいくレベルまで向上する見込はあるか	総合的判断	プロジェクト活動対象範囲内の指標以外の成果等	① プロジェクト活動報告書等 ② 専門家、C/P	① 資料レビュー ② インタビュー ③ 質問票 ④ 直接観察
	因果関係	プロジェクト目標の達成は成果によって引き起こされたものか	ロジックに誤りはないか	論理性の検証	調査団による検証	① プロジェクト報告書類 ② 専門家、C/P	① 資料レビュー ② インタビュー
			他にプロジェクト目標達成に必要な成果、または有効なアプローチななかったか	実施アプローチの検証	① 調査団による検証 ② 関係者の意見	① プロジェクト報告書類 ② 専門家、C/P	① 資料レビュー ② 質問票 ③ インタビュー
	促進・阻害要因	外部条件の適切性	外部条件は現状に則しているか	現状確認	調査団による検証	① プロジェクト報告書類 ② 専門家、C/P	① 資料レビュー ② インタビュー
			外部条件は理論的に適切か	論理性の検証	調査団による検証	① プロジェクト報告書類 ② 専門家、C/P	① 資料レビュー ② インタビュー
		外部条件が満たされたか	プロジェクト目標への外部条件「フィリピン国政府が関連の研究施設維持のために必要な予算サポートをする」の状況		予算措置状況	① プロジェクト報告書類 ② 専門家、C/P	① 資料レビュー ② 質問票 ③ インタビュー
			成果達成への外部条件「病院、地方政府からの支援が得られる」の状況		病院、地方政府からの支援状況	① プロジェクト報告書類 ② 専門家、C/P	① 資料レビュー ② 質問票 ③ インタビュー
			その他、想定される成果達成への外部条件「指導を受けたC/Pがプロジェクト成果達成に影響を及ぼすほど離職しない」の状況		① C/Pの離職率等 ② 人員措置状況	① プロジェクト報告書類 ② 専門家、C/P	① 資料レビュー ② 質問票 ③ インタビュー
			その他の影響はあるか		その他想定内外の外部条件	① 専門家、C/P ② プロジェクト報告書類	① 資料レビュー ② 質問票 ③ インタビュー
効率性	時間資源	計画どおりに成果が達成されたか			プロジェクト活動の進捗管理	① プロジェクト報告書類 ② 関係者の意見	① 資料レビュー ② 質問票 ③ インタビュー
	投入の質、量、タイミング	達成されたアウトプットから見て、投入の質、量、タイミングは適切か	専門家派遣人数、専門分野、派遣時期は適切か	実績の部分に関しては計画値との比較	① 派遣実績 ② 専門家の働きぶり	① 投入実績表 ② プロジェクト報告書類 ③ 専門家、C/P	① 資料レビュー ② 質問票 ③ インタビュー
			供与機材の種類、量、設置時期は適切か		① 機器投入実績 ② 利用状況	① 投入実績表 ② 専門家、C/P	① 資料レビュー ② 質問票 ③ 直接観察 ④ インタビュー
			本邦のタイミング、内容、期間は適切か また、どのように成果に反映したか		① 研修受入実績 ② その他の情報	① 投入実績表 ② 研修員 ③ 専門家	① 資料レビュー ② 質問票 ③ インタビュー
			現地研修のタイミング、内容、期間、フォローアップは適切か		① 現地研修開催実績 ② 研修成果	① プロジェクト報告書類 ② 専門家、C/P	① 資料レビュー ② 質問票 ③ インタビュー
			プロジェクトの現地活動費は適切に執行されたか		日本側現地活動費投入実績	① 投入実績表 ② 専門家	① 資料レビュー ② インタビュー
			フィリピン側のC/P配置、予算規模は適切か		フィリピン側による予算、人員投入実績	① 投入実績表 ② 専門家、C/P	① 資料レビュー ② 質問票 ③ インタビュー
		他のリソースとの連携	成果達成に貢献する他のリソース等との連携実績はあったか		連携実績	① プロジェクト報告書類 ② 専門家	① 資料レビュー ② 質問票

【評価５項目】小児呼吸器感染症の病因解析・疫学に基づく予防・制御に関する研究プロジェクト中間レビュー調査

評価項目	評価設問			評価基準	必要なデータ	情報源	入手手段
	大項目	中項目	小項目				
	促進要因・阻害要因	前提条件が計画されたプロジェクト開始期日までに満たされたか	個々の研究活動開始までに、RITM、東北大学、東ビサヤ地域医療センター（EVRMC）、パラワン州立病院（ONP）、ビリラン州立病院（BPH）、保健省東ビサヤ地域局（DOH-CHDEV）の内部審査委員会から研究承認がえられたか		委員会からの研究承認時期	① 専門家、C/P ② プロジェクト報告書類	① 資料レビュー ② 質問票 ③ インタビュー
			各地方自治体の長にプロジェクトについて告知されたか		地方自治体の長との協議実績	① 専門家、C/P ② プロジェクト報告書類	① 資料レビュー ② 質問票 ③ インタビュー
			プロジェクトが各関連病院長からの承認が得られたか		関連病院の長からのプロジェクトの承認	① 専門家、C/P ② プロジェクト報告書類	① 資料レビュー ② 質問票 ③ インタビュー
			その他の影響はあったか		その他想定内外の外部条件	① 専門家、C/P ② プロジェクト報告書類	① 資料レビュー ② 質問票 ③ インタビュー
		効率性を促進した要因はあるか			その他の情報	① プロジェクト報告書類 ② 専門家、C/P	① 資料レビュー ② 質問票 ③ インタビュー
		効率性を阻害した要因はあるか			その他の情報	① プロジェクト報告書類 ② 専門家、C/P	① 資料レビュー ② 質問票 ③ インタビュー
インパクト	上位目標の達成見込み	プロジェクト期間終了後３年から５年で、フィリピンにおける小児肺炎に起因する死亡が低下する見込みはあるか		現状からの予測	① プロジェクト目標達成見込み ② 持続性検証	① プロジェクト報告書類 ② 関係者の意見	① 資料レビュー ② 質問票 ③ インタビュー
		（想定される上位目標として）プロジェクトで提示したエビデンスに基づく介入が、フィリピンで小児肺炎による死亡率低減に向けて公的に認められる可能性はあるか		現状からの予測	① プロジェクト目標達成見込み ② 持続性の検証	① プロジェクト報告書類 ② 関係者の意見	① 資料レビュー ② 質問票 ③ インタビュー
	その他のインパクト	想定される上位目標以外に、プロジェクトはどのような変化をもたらしそうか、また、現時点で発現しているインパクトはあるか	正のインパクト		その他の情報	① プロジェクト活動報告書等 ② 専門家、C/P ③ 関係者の意見	① 資料レビュー ② 質問票 ③ インタビュー
			負のインパクト		その他の情報	① プロジェクト活動報告書等 ② 専門家、C/P ③ 関係者の意見	① 資料レビュー ② 質問票 ③ インタビュー
持続性	プロジェクトの効果が援助終了後も維持される見込み	政策・制度的側面	フィリピンにおける感染対策及び科学技術に関連する政策が継続・強化されるか		フィリピンの政策	① 保健省 ② 専門家、C/P ③ 関係者の意見	① 資料レビュー ② 質問票 ③ インタビュー
		財務的側面	プロジェクトに由来する便益維持・向上のための予算は担保されるか		フィリピンの政策	① 保健省 ② 専門家、C/P ③ 関係者の意見	① 資料レビュー ② 質問票 ③ インタビュー
			プロジェクト成果普及のための人員・予算措置は実施される見込みがあるか		フィリピンの政策	① 保健省 ② 専門家、C/P ③ 関係者の意見	① 資料レビュー ② 質問票 ③ インタビュー
		技術的側面	プロジェクトにより導入された研究技術は、プロジェクト終了後も維持・向上する見込みはあるか		① プロジェクト成果維持のためのメカニズムの有無等 ② 技術力向上の機会	① プロジェクト活動報告書等 ② 専門家、C/P ③ 関係者の意見	① 資料レビュー ② 質問票 ③ インタビュー
		促進要因・阻害要因	上位目標実現に向けた具体的な取り組み等は検討されているか		検討結果	① プロジェクト活動報告書等 ② 専門家	① 質問票 ② インタビュー
			持続性に影響する想定される阻害要因に対する対応は検討されている		検討結果	① プロジェクト活動報告書等 ② 専門家	① 質問票 ② インタビュー
	総合的持続性	上記のような側面を総合的に勘案して、持続性は担保されているか			N/A	① プロジェクト報告書類 ② 専門家、C/P ③ 関係者の意見	調査団による評価分析

Persons Interviewed

＜Philippines Side＞

Department of Health (DOH)

- Ms. Maylene Beltran, Director IV BIHC-DOH
- Dr. Maria Soledad Antonio, OIC Division Chief, BIHC-DOH
- Dr. Irma Asuncion, Director IV, NCDPC
- Dr. Mario Baquilod, OIC Director III, IDO, NCDPC
- Dr. Honorata L. Catibog, Director III, NCDPC
- Dr. Juanita Basilio, Medical Officer V, NCDPC
- Dr. Jaime Bernadas, Director IV, CHD 8
- Dr. Jose Llacuna, Jr., Director IV, CHD IV B
- Mr. Shinichi Takenaka, JICA Health Sector Advisor, BIHC
- Mr. Jimmy A. Recilla, Project Development Officer, BIHC

Research Institute for Tropical Medicine (RITM)

- Dr. Socorro P. Lupisan, Director III, RITM
- Dr. Veronica Tallo, Head of Department of Epidemiology and Biostatistics, RITM
- Dr. Amado Tandoc III, Head of Department of Virology, RITM
- Ms. Lydia T. Sombrero, Supervising Science Research Specialist, RITM
- Ms. Vina Lea Arguelles – Science Research Specialist II, RITM

Asian Foundation for Tropical Medicine Inc. (AFTM)

- Ms. Marilu O. Venturina, Executive Director / Chief Operating Officer, AFTM, Inc.

＜Japanese side＞

JICA Experts

- Prof. Hitoshi Oshitani, Chief Advisor, JICA
- Dr. Akira Suzuki, JICA Short Term Expert
- Dr. Raita Tamaki, JICA Short Term Expert
- Mr. Ryosuke Kojima, Project Coordinator

JICA Philippines office

- Mr. Takahiro Sasaki, Chief Representative, JICA
- Ms. Sachiko Takeda, Senior Representative, JICA
- Ms. Yukari Saito, Section Chief, JICA
- Ms. Atsuko Itsuki, Representative , JICA
- Ms. Mary Ann Bakisan, Program Officer, JICA

Embassy of Japan (EOJ)

- Dr. Junichi Nitta, Second Secretary Health Attache

５．投入実績表

５－１　フィリピン側研究者及び管理メンバー

Researchers and Administrative Personnel of the Philippine side

Group	Position	Original as of R/D	Actual as of September 2013
Administration	Project Director	Dr.Remigio M.Olveda, Director, RITM	Dr.Socorro Lupisan, Director, RITM(March,2013-)
	Project Manager	Dr.Socorro Lupisan, Assistant Director, RITM	Dr.Veronica Tallo(April,2013-)
	Project Co-managers	Ms.Hazel Galang, Head, Department of Virology, RITM	Dr.Amado Tandoc III (July,2011-)
	Project Co-managers	Ms.Lydia Sombrero, Senior Scientist, Department of Microbiology, RITM	Ms.Lydia Sombrero, Supervising Research Specialist , Department of Microbiology, RITM
	Project Coordinator	JICA	Mr. Ryosuke Kojima (June,2013-)
Researchers			
Working Group A			
Hospital Group	Leader	Dr.Socorro Lupisan, Assistant Director, RITM	Dr.Socorro Lupisan, Director, RITM(March,2013-)
	Clinical	Dr.Socorro Lupisan, Assistant Director, RITM	Dr.Socorro Lupisan, Director, RITM(March,2013-)
	Bacteriology	Ms.Lydia Sombrero, Senior Scientist, Department of Microbiology, RITM	Ms.Lydia Sombrero, Supervising Research Specialist , Department of Microbiology, RITM
		Ms.Melisa Mondoy, RITM	Ms.Melisa Mondoy, Senior Research Specialist II, RITM
		Ms.Kristine Jeanne A.Yap, RITM	
		Ms.Daryl Almonia, RITM	Ms.Daryl Almonia, Bacteriology II, RITM
	Virology	Ms.Hazel Galang, Head, Department of Virology, RITM	Dr.Amado Tandoc III, Chief of Virology(July,2011-)
		Ms.Edelwisa S.Mercado, RITM	Ms.Edelwisa S.Mercado,Head of Molecular Biology Laboratory, RITM
		Mr.Jun Ryan Orbina, RITM	Mr. Jun Ryan Orbina, Laboratory Manager, Molecular Biology Laboratory,RITM
Working Group B			
Field Study Group	Leader	Dr.Veronica Tallo	Dr.Veronica Tallo, Chief of DEBS
	Disease Burden	Dr.Veronica Tallo	Dr. Veronica Tallo –Chief of DEBS, Ms. Portia Alday- Supervising Research Specialist, Ms. Marianette Inobaya & Mr. Alvin Tan – Senior Research Specialist
	Interventions	Dr.Veronica Tallo	Dr. Veronica Tallo –Chief of DEBS, Ms. Portia Alday- Supervising Research Specialist, Ms. Marianette Inobaya & Mr. Alvin Tan – Senior Research Specialist
Working Group C			
Working Group D			
Sentinel Site Group	Leader	RITM	(RITM Hospital)
	Clinical	Dr.Mari Rose de los Reyes, RITM	Dr. Mari Rose delos Reyes- Medical Specialist III & Head Medical Department, RITM
		Medical Officers(2)	Dr. Lea Asi – Head Employee Services & Medical Officer III
	Laboratory	Dr.Rosario Z. Capeding, RITM	(EVRMC)
		CHD	Dr. Rhodora Angulo- Chairman Department Pediatrics
		EVRMC, ONP, BPH	Dr. Rapunzel Aniceto – Project Physician
		Head of Pediatrics	(BPH)
		Head of the Laboratory	Dr. Edgar Veloso –Chief of the Hospital
		Head of OPD	Dr. Gay Anne Rico – Project Physician
		Chief of Nursing Service	(ONP)
		Head of Radiology Department	Dr. Melecio Dy – OIC
			Dr. Reynaldo Frederick Quicho – Project Physician

Dispatch of Japanese Experts

As of March 31, 2013

JFY 2011					
No	**Name**	**Organization**	**Position**	**Field**	**Duration**
1	Hitoshi OSHITANI	Tohoku University	Professor	Chief Advisor	2011/05/17-2011/05/22*
2	Akira SUZUKI	Tohoku University	Assistant Professor	Virology	2011/05/18-2011/05/21*
3	Raita TAMAKI	Tohoku University	Assistant Professor	Public Health	2011/04/01-2011/05/02*
4	Raita TAMAKI	Tohoku University	Assistant Professor	Public Health	2011/05/17-2011/05/22*
5	Raita TAMAKI	Tohoku University	Assistant Professor	Public Health	2011/06/01-2011/06/05*
6	Raita TAMAKI	Tohoku University	Assistant Professor	Public Health	2011/06/21-2011/07/11*
7	Raita TAMAKI	Tohoku University	Assistant Professor	Public Health	2011/07/31-2011/08/06
8	Nobuko SATO	Tohoku University	Technical Assistant	Bacteriology	2011/08/01-2011/08/06
9	Hitoshi OSHITANI	Tohoku University	Professor	Chief Advisor	2011/12/04-2011/12/14
10	Hitoshi OSHITANI	Tohoku University	Professor	Chief Advisor	2012/02/28-2012/03/13
11	Akira SUZUKI	Tohoku University	Assistant Professor	Virology	2011/11/20-2011/11/26
12	Akira SUZUKI	Tohoku University	Assistant Professor	Virology	2011/12/04-2011/12/17
13	Raita TAMAKI	Tohoku University	Assistant Professor	Public Health	2011/10/03-2012/01/22
14	Raita TAMAKI	Tohoku University	Assistant Professor	Public Health	2012/02/09-2012/03/19
15	Takashi UCHINO	JICA	Contract base	Project Coordinator	2011/09/26-2013/02/07

JFY 2012					
No	**Name**	**Organization**	**Position**	**Field**	**Duration**
1	Hitoshi OSHITANI	Tohoku University	Professor	Chief Advisor	2012/05/02-2012/05/10
2	Hitoshi OSHITANI	Tohoku University	Professor	Chief Advisor	2012/07/18-2012/07/18
3	Hitoshi OSHITANI	Tohoku University	Professor	Chief Advisor	2012/09/17-2012/09/20
4	Hitoshi OSHITANI	Tohoku University	Professor	Chief Advisor	2013/01/15-2013/01/18
5	Hitoshi OSHITANI	Tohoku University	Professor	Chief Advisor	2013/02/13-2013/2/18
6	Hitoshi OSHITANI	Tohoku University	Professor	Chief Advisor	2013/02/20-2013/2/22
7	Akira SUZUKI	Tohoku University	Assistant Professor	Virology	2012/07/18-2012/07/25
8	Akira SUZUKI	Tohoku University	Assistant Professor	Virology	2012/08/19-2012/08/21
9	Akira SUZUKI	Tohoku University	Assistant Professor	Virology	2012/08/24-2012/08/25
10	Akira SUZUKI	Tohoku University	Assistant Professor	Virology	2012/10/28-2012/11/03
11	Akira SUZUKI	Tohoku University	Assistant Professor	Virology	2012/12/02-2012/12/08
12	Akira SUZUKI	Tohoku University	Assistant Professor	Virology	2013/02/11-2013/02/16
13	Raita TAMAKI	Tohoku University	Assistant Professor	Public Health	2012/04/10-2012/08/22
14	Raita TAMAKI	Tohoku University	Assistant Professor	Public Health	2012/09/06-2012/12/23
15	Raita TAMAKI	Tohoku University	Assistant Professor	Public Health	2013/01/08-2013/02/06
16	Raita TAMAKI	Tohoku University	Assistant Professor	Public Health	2013/02/08-2013/02/22
17	Raita TAMAKI	Tohoku University	Assistant Professor	Public Health	2013/02/28-2013/03/18
18	Nobuko SATO	Tohoku University	Technical Assistant	Bacteriology	2012/04/22-2012/04/29
19	Nobuko SATO	Tohoku University	Technical Assistant	Bacteriology	2013/01/07-2013/01/12
20	Shinsuke MURAI	Tohoku University	Assistant Professor	Public Health	2012/06/25-2012/07/05
21	Mitsuhiko IWASHITA	JICA	Contract base	Project Coordinator	2013/02/12-2013/06/11

*Expenses for these six times dispatch of Japanese experts were shouldered by JST (April 2011-June 2011).

Counterpart training in Japan

As of March 31, 2013

JFY 2011					
No	**Name**	**Organization/Position**	**Training Agency**	**Training Subject**	**Training Period**
1	Ms. Vina Lea Fontelera Arguelles	RITM, Medical Technologist II	Tohoku University and Sendai Medical Center	Isolation of respiratory viruses	2011/10/17-2011/12/15
2	Ms. Daryl Joy Villaruz Alomonia	RITM, Bacteriologist II	Tohoku University	Diagnosis of atypical pneumonia	2011/10/17-2011/12/15

JFY 2012					
No	**Name**	**Organization/Position**	**Training Agency**	**Training Subject**	**Training Period**
1	Ms. Maria Nette Inobaya	RITM, Senior Science Research Specialist	Tohoku University	Epidemiological analysis with field data	2012/08/22-2012/09/23
2	Mr. Alvin Gue Tan	RITM, Senior Science Research Specialist	Tohoku University	Data analysis on disease burden study	2013/02/03-2013/03/06

５－４　供与機材リスト

Provision of Equipment (As of 15 August, 2013)

Location	Name of Equipment	Manufacturer	Model	Quantity
BPH	LapTop PC	HP	HP Pavilion DV6-6157TX	1
BPH	Printer/Scanner/Copier	canon	imageCLASSF4570dn	1
BPH	DeskTop Computer	Dell	XPS 8300	1
BPH	Bio Safety Cabinet	ESCO	SC2-4A3	1
BPH	Autoclave	Daihan Labtech	LAC-5041P	2
BPH	Centrifuge (with swing rotor)	Eppendorf	5702	1
BPH	Height Scale	SECA	SECA 416	1
BPH	Weghing Scale	SECA	SECA 354	1
BPH	Cool Box	Coleman	6277/6278	3
BPH	Refrigerator	SANYO	SR-D49T (322lt)	2
BPH	Generator (Diesel)	Yangzhou	YZ485ZD 20KW/25KVA	1
BPH	Freezer (medical)	SANYO	MDF-U537D with AVR (Stavol 2KVA)	1
BPH	Upright Microscope	Olympus	CX-41RF	1
BPH	Incubator	Panasonic	MIR-154-PK Cooled Incubator w. AVR(Stavol) 2KVA	1
BPH	Pulse Oxymeter	NONIN	Handy Pulse Oxymeter Model: 2500A PalmSAT with Finger Clip Sensor (pediatric) Charger set for PalmSAT(charger stand)2500C-UN IV	1
BPH	Pulse Oxymeter	NONIN	Handy Pulse Oxymeter Model: 2500A PalmSAT with Finger Clip Sensor (pediatric) Charger set for PalmSAT(charger stand)2500C-UN IV	1
BPH	Blood Pressure Apparatus pediatric	OMRON	Blood Pressure monitor HEM907, Battery Pack HEM907、230H HEM-907 Adaptor	1
BPH	Digital Thermometer	OMRON	OMRON MC-670	6
BPH	StateScopes	3M	Littman Stetoscope 'Classic II. Pediatric Stethoscope' 2113R x7 、2138 Royal Blue x 1, Orage x 1	9
BPH	Otoscope	Welch Allyn	Diagnostic Otoscope with Insufflator Bulb Model # 20000 x 4 sets 、 Power Handle # 71000-C x4、 Hardcase x 4	1
BPH	Hot Stirrer	AS ONE	SN:L09080031	1
BPH	Electric Balance	Denver Instrument	Top Loading Weghing Balance MXX-612	1
BPH	pHmeter		SN：UB10098038	1
BPH	Loop Incinerator	J.P. Selecta	Sterilbio Loop Incinerator (3000788)	1
BPH	Colorimeter	APEL	APEL DIGITAL COLORMETER AP-101	1
BPH	Digital Camera	NIKON	DIGITAL Camera COOLPIX AW100	1
BPH	Reference Books	4 books	"Red Book""Nursing Health Assessment""Manual of Clinical Microbiology" "Konemans Atlas and Textbook of Diagnostic Microbiology"	4
BPH	Walkie-Talkie	Motorola	with charge unit	2
BPH	UPS	APC	ES500	1
BPH	Steel cabinet Horizontal (2 drawer)	CLC Marketing		1
BPH	Vortex mixer	Vortex	Heidolph Reax Control	1
BPH	Electric Stove	La Germania		1
BPH	Digital Thermometer for equipment	SATO	PC-3300	5
BPH	Data Logger	AS ONE	EC800A	2
BPH	Micropipette 20ul	Gilson	Pipeteman 20ul	1
BPH	Micropipette 100ul	Gilson	Pipeteman 100ul	1

Location	Name of Equipment	Manufacturer	Model	Quantity
BPH	Micropipette 200ul	Gilson	Pipeteman 200ul	1
BPH	Micropipette 1000ul	Gilson	Pipeteman 1000ul	1
BPH	Vernier Micrometer Calipers	AS ONE	M-type, VC-15	2
BPH	Digital Camera	Nikon	Coolpix AW100	1
BPH	Airconditioner	Carrier	Window Type	1
PHO Biliran	Refrigerator	SANYO	SR-D49T (322lt)	1
EVRMC	LapTop PC	HP	HP Pavilion DV6-6157TX	3
EVRMC	Printer/Scanner/Copier	canon	ICMF4570DN	1
EVRMC	DeskTop Computer	Dell	XPS 8300	1
EVRMC	Height Scale	SECA	SECA 416	1
EVRMC	Weghing Scale	SECA	SECA 354	1
EVRMC	Cool Box	Coleman	6278-7036 2801	3
EVRMC	Blood Pressure Apparatus pediatric	OMRON	Blood Pressure monitor HEM907, Battery Pack HEM907、230H HEM-907 Adaptor	1
EVRMC	StateScopes	3M	Littman Stetoscope 'Classic II. Pediatric Stethoscope' 2138 Royal Blue x 1	1
EVRMC	Otoscope	Welch Allyn	Diagnostic Otoscope with Insufflator Bulb Model # 20000 x 4 sets 、 Power Handle # 71000-C x4、 Hardcase x 4	1
EVRMC	Biometric Time & Attendance System	David Link	DL-F88	1
EVRMC	Data Logger	AS ONE	EC800A	2
ONP	LapTop PC	HP	HP Pavilion DV6-6157TX	1
ONP	Printer/Scanner/Copier	canon	ICMF4570DN	1
ONP	DeskTop Computer	Dell	XPS 8300	1
ONP	Autoclave	Daihan Labtech	LAC-5041P	2
ONP	Centrifuge (with swing rotor)	Eppendorf	5702	1
ONP	Cool Box	Coleman	6278-7036 2801	2
ONP	Refrigerator	SANYO	SR-D49T (322lt)	4
ONP	Generator (Diesel)	Lovol	1004TG 60KW/75KVA	1
ONP	Freezer (medical)	SANYO	MDF-U537D with AVR (Stavol 2KVA)	1
ONP	Upright Microscope	Olympus	CX-41-72CO2	1
ONP	Pulse Oxymeter	NONIN	Handy Pulse Oxymeter Model: 2500A PalmSAT with Finger Clip Sensor (pediatric) Charger set for PalmSAT(charger stand)2500C-UNIV	2
ONP	Blood Pressure Apparatus pediatric	OMRON	Blood Pressure monitor HEM907, Battery Pack HEM907、230H HEM-907 Adaptor	1
ONP	Digital Thermometer	OMRON	OMRON MC-670	5
ONP	StateScopes	3M	Littman Stetoscope 'Classic II. Pediatric Stethoscope' 2138 Royal Blue x1、Orage x 2	3
ONP	Otoscope	Welch Allyn	Diagnostic Otoscope with Insufflator Bulb Model # 20000 x 4 sets 、 Power Handle # 71000-C x4、 Hardcase x 4	1
ONP	Hot Stirrer	AS ONE	SN:L09080073	1
ONP	Electric Balance	Denver Instrument	Top Loading Weghing Balance MXX-612	1
ONP	Loop Incinerator	J.P. Selecta	Sterilbio Loop Incinerator (3000788)	1
ONP	Colorimeter	APEL	APEL DIGITAL COLORMETER AP-101	1
ONP	Digital Camera	NIKON	DIGITAL Camera COOLPIX AW100	1
ONP	LED Projector	EPSON	EB-176W H478D	1

Location	Name of Equipment	Manufacturer	Model	Quantity
ONP	Reference Books	4 books	"Red Book""Nursing Health Assessment""Manual of Clinical Microbiology" "Konemans Atlas and Textbook of Diagnostic Microbiology"	4
ONP	Vortex mixer	Vortex	Heidolph Reax Control	1
ONP	Compressor Nebulizer	OMRON	COM A-I-R	1
ONP	Printer	CANON	Canon Pixma Printer	1
ONP	Digital Thermometer for equipment	SATO	PC-3300	5
ONP	Data Logger	AS ONE	EC800A	2
ONP	Micropipette 20ul	Gilson	Pipeteman 20ul	2
ONP	Micropipette 100ul	Gilson	Pipeteman 100ul	2
ONP	Micropipette 200ul	Gilson	Pipeteman 200ul	2
ONP	Micropipette 1000ul	Gilson	Pipeteman 1000ul	2
ONP	Airconditioner	Panasonic	CW-SC124VPH	2
ONP	Airconditioner	Panasonic	CS-PS12MKQ	1
ONP	Roller Screens for windows			7
RITM (Director)	Reference Books	2 book	"Red Book""Nursing Health Assessment"	2
RITM(Director)	Lap Top PC for RITM staff	TOSHIBA	TOSHIBA Portage R930-3039 40G, SPSSx1、MS Office Home&Student 2010x 1, MS Office Pro2010x1, FileMaker Pro 12,	1
RITM(Co-manager,DEBS)	Lap Top PC for RITM staff	TOSHIBA	TOSHIBA Portage R930-3039 40G, MS Office Pro2010x1, FileMaker Pro 12	1
RITM(Co-manager,Micro)	Lap Top PC for RITM staff	TOSHIBA	TOSHIBA Portage R930-3039 40G, MS Office Home&Student 2010x 1, FileMaker Pro 12,	1
RITM(ER)	Pulse Oxymeter	NONIN	Handy Pulse Oxymeter Model: 2500A PalmSAT with Finger Clip Sensor (pediatric) Charger set for PalmSAT(charger stand)2500C-UNIV	1
RITM(ER)	Blood Pressure Apparatus pediatric	OMRON	Blood Pressure monitor HEM907, Battery Pack HEM907、230H HEM-907 Adaptor	1
RITM(ER)	Digital Thermometer	OMRON	OMRON MC-670	1
RITM(ER)	StateScopes	3M	Littman Stetoscope 'Classic II. Pediatric Stethoscope' 2138 Orage x 2	2
RITM(ER)	Otoscope	Welch Allyn	Diagnostic Otoscope with Insufflator Bulb Model # 20000 x 4 sets 、 Power Handle # 71000-C x4、 Hardcase x 4	1
RITM(ER)	Optional part of Pulse Oxymeter	NONIN	PalmSAT 2500B (Rechargable Battery)	1
RITM(MBL 1F)	Genetic Analyzer	Applied BioSystem Inc.	4442019 3500, with DeskTop PC(OPTIPLEX) & AVR(GCM)	1
RITM(MBL 1F)	Agarose Gel Electrophoresis System	Bio Rad, GE Healthcare	SubCell Agarose Gel Electrophoresis System #192, Toray ; 25×25㎝ Gel Caster, GE healthcare 'Power supply EPS301	1
RITM(MBL 1F)	Centrifuge (with swing & plate rotors)	Eppendorf	5804	1
RITM(MBL 1F)	Gel Imaging System	UVP	DigiDoc It with Desk Top PC(ORION) & Printer(canon) w. software	1
RITM(MBL 2F)	Realtime PCR System	Applied BioSystem Inc.	Step One Plus4376598(mian unit), 4366932, 4311971,with LapTop(Dell Latitude E6510)	1
RITM(MBL 2F)	Freezer (medical)	SANYO	MDF-U537D with AVR (Stavol 2KVA)	1
RITM(MBL 2F)	PCR	Takara	Thermal Cycler Dice Gradient TP-600 ×1	1
RITM(MBL 2F)	Spin-column Auto Sample Prep System	QIAGEN	QUIACUBE 9001293, with AVR(GCM)	1
RITM(MBL 2F)	PCR	TAKARA	PCR Thermal Cycler Dice Gradient TP-600	1

Location	Name of Equipment	Manufacturer	Model	Quantity
RITM(MBL 2F)	Water Purifier	Barnstead	Easypure Rodi System, Start-Up kit, Cartridge Kit, Wall-Mounting Bracket, External Booster Pump Rodi, Pre-Filtration Accessory, Liquid-Sense Controller, Liquid-Detector Pad	1
RITM(MBL 2F)	Micropipette 20ul	Gilson	Pipeteman 20ul	1
RITM(MBL 2F)	Micropipette 200ul	Gilson	Pipeteman 200ul	1
RITM(Microbiology)	Mobile Phone	Nokia	101 RM769	1
RITM(Microbiology)	Freeze Dryer	Yamato	DC401	1
RITM(Microbiology)	Bio Safety Cabinet	ESCO	SC2-4A3 with AVR(Cimtronix 9411)	1
RITM(Microbiology)	Autoclave	Daihan Labtech	LAC-5041P	1
RITM(Microbiology)	Autoclave	Daihan Labtech	LAC-5041P	1
RITM(Microbiology)	Refrigerator	SANYO	SR-D49T (322lt)	1
RITM(Microbiology)	Water Purifier	Barnstead	Easypure RoDi System (CP 99249-00)	1
RITM(Microbiology)	CO2 Incubator	Esco	Celculture Incubator CCL-170A-8	1
RITM(Microbiology)	Upright Microscope	Olympus	CX-41-72CO2	1
RITM(microbiology)	Colorimeter	APEL	APEL DIGITAL COLORMETER AP-101	1
RITM(Microbiology)	Reference Book	2 books	"Methods for Antimicrobial Dilution & Disk Susceptibility Testing of infrequently Isolated or Fastidious Bacteria""Manual of Clinical Microbiology"	2
RITM(Microbiology)	Pipet Aid	BD Falcon	™ Express™ Pipet-Aid™ 357590, with stand & charging adaptor	1
RITM(Microbiology)	Micropipette 1000ul	Gilson	Pipeteman 1000ul	1
RITM(Microbiology)	Pipet Aid	BD Falcon	™ Express™ Pipet-Aid™ 357590, w stand & charging adptor	1
RITM(P3)	LapTop PC	HP	HP Pavilion DV6-6157TX	1
RITM(P3)	Mobile Phone	Nokia	101 RM769	1
RITM(P3)	Microplate Reader	Tristar2, Berhold Technologies	LB 942 Multimode Microplate Reader	1
RITM(P3)	Bio Safety Cabinet	ESCO	SC2-4A3 with AVR(Cimtronix 9411)	1
RITM(P3)	Autoclave	Daihan Labtech	LAC-5041P	2
RITM(P3)	Cool Box	Coleman	6278-7036 2801	1
RITM(P3)	Water Purifier	Thermo Scientific	Easypure RoDi System 7128	1
RITM(P3)	Microplate Washer	Bio-Rad	ImmunoWash Model 1575	1
RITM(P3)	CO2 Incubator	Esco	Celculture Incubator CCL-170A-8 with UPS (Powercom)	1
RITM(P3)	Deep Freezer (low temparature)	Panasonic	MDF-U33V-PK with AVR(Stavol 3KVA)	2
RITM(P3)	Upright Microscope	Olympus	CX-41-72CO2	1
RITM(P3)	Inverted Microscope set	Olympus	IX71-F22FL/PH w Camera (DP72), Laptop HP Elitebook 8460p	1
RITM(P3)	Inverted Microscope	OLYMPUS	Inverted Microscope CKX41N-31PHP ×1 with Camera Adaptor U-TV1X-2 ×1、 C mount Camera Adaptor U-CMAD3 ×1	1
RITM(P3)	Rack for Freezer		Inventory rack for MDF-U33V×6、Inventory rack for MDF-U33V×6	12
RITM(P3)	Pharmaceutical Refrigirater	Panasonic	MPR-414F-PK with AVR(Stavol SVC-2kVA)	1
RITM(P3)	Biological Safety Cabinet	ESCO	Biological Safety Cabinet LA2 3FT A220-240VAC 60HZ ×1	1
RITM(P3)	Micropipette 20ul	Gilson	Pipeteman 20ul	1
RITM(P3)	Pipet Aid	Dramond	Pipet-Aid XP, 110V charger	3
RITM(P3)	UPS	Powercom	Black Knight series2000VA	1

Location	Name of Equipment	Manufacturer	Model	Quantity
RITM(MBL Freezer House)	Deep Freezer (low temparature)	Panasonic	MDF-U33V-PK with AVR(Stavol 3KVA)	1
RITM(Microbiology Freezer House)	Deep Freezer (low temparature)	Panasonic	MDF-U33V-PK with AVR(Stavol 3KVA)	2
RITM(Microbiology Freezer House)	Freezer (medical)	SANYO	MDF-U537D with AVR (Stavol 2KVA)	1
RITM(Virology)	Liquid Nitrogen Tank and Accessories	CP/Taylor-Wharton	cp-03773-61	2
BFO	LapTop PC	HP	HP Pavilion DV6-6157TX	1
BFO	Printer/Scanner/Copier	canon	ICMF4570DN	4
BFO	DeskTop Computer	Dell	XPS 8300	4
BFO	Mobile Phone	Sony Ericson	Xperia Mini ST15i	5
BFO	GPS	Garmin	Garmin novi 1410	1
BFO	Refrigerator	SANYO	SR-D49T (322lt)	2
BFO	Printer	BROTHER	MFC74700 5-IN-1 MONO LASER	1
BFO	Weghing Scale	TANITA	Small Scale, Pearl White HD-386-PR x 11	11
BFO	Tablet PC	Apple	iPad2Wifi 16GB BLK、iPad2Wifi 16GB WHT、i-Pad case(pink)	10
BFO	Walkie-Talkie	Motorola	with charge unit	6
BFO	Printer	CANON	IP 2770	1
BFO	LapTop PC	Lenovo	Ideapad	1
BFO	UPS	Panther	PUP500	1
BFO	UPS	Panther	PUP501	1
BFO	UPS	APC	Back/UPS ES-500	1
BFO	UPS	APC	Back/UPS ES-501	1
BFO	Airconitioner (window type)	WhiteWestinghouse	Window Type	3
BFO	Airconitioner (SplitType)	Samsung	ASV-12ESLN	1
BFO	Projector	Toshiba	NPS10A	1
BFO	Projector Screen Tripod	Meki		1
BFO	Steel Cabinet Vertical (2 drawer)	CLC Marketing		1
BFO	Water Heater	AEG	BS60E	1
BFO	Biometric Time & Attendance System	David Link	DL-F88	1
BFO	Emergency Light	OMNI	AEL 9032/12V	1
BFO	Wifi Router	Cisco	Linksys E1200	1
BFO	Fiemaker Pro Ver 12. License	FileMaker	ENG, Version 12	2
BFO	Airconditioner (Floor Stand Type)	KOPPEL	KFM-36EOA/KPC-361HOA	1
RITM(office)	Mobile Phone	Xperia Mini ST15i	Sony Ericson	10
RITM(office)	GPS	Garmin novi 1410	Garmin	1
RITM(office)	LapTop PC	HP Pavilion DV6-6157TX	HP	3
RITM(office)	Software (FileMaker)	Filemaker Pro11 Japanese Convertible version	FileMaker	1
RITM(office)	Software (FileMaker)	Filemaker Pro11 DVD-ROM(P-1-F31D128) B0039OL576	FileMaker	1
RITM(office)	Monitor 24inch	E2437FH 24″ LED MONITOR	ACC	1
RITM(office)	Monitor 24inch	E2437FH 24″ LED MONITOR	ACC	1

Location	Name of Equipment	Manufacturer	Model	Quantity
RITM(office)	Printer	HL4570CDW COLOUR LASER	BROTHER	1
RITM(office)	Pulse Oxymeter	Handy Pulse Oxymeter Model: 2500A PalmSAT with Finger Clip Sensor (pediatric) Charger set for PalmSAT (charger stand) 2500C-UNIV	NONIN	1
RITM(office)	StateScopes	Littman Stetoscope 'Classic II. Pediatric Stethoscope' 2138 Royal Blue x 2	3M	2
RITM(office)	Colorimeter	APEL DIGITAL COLORMETER AP-101	APEL	1
RITM(office)	Software for PC	Filemaker Pro11Japanese Version × 1	FileMaker	1
RITM(office)	Digital Camera	DIGITAL Camera COOLPIX AW100	NIKON	7
RITM(office)	Weghing Scale	Small Scale, Pearl White HD-386-PR x 11	TANITA	1
RITM(office)	Optional part of Pulse Oxymeter	2500C-UNIV. Power Supply	NONIN	1
RITM(office)	LED Projector	EB-176W H478D	EPSON	2
RITM(office)	PC for Server	Monitor:LG Flatron IPS234V-PM, O: MS Server PO#10079149	Assembling Model	1
RITM(office)	Pulse Oxymeter	PalmSAT 2500A(with Alarm) x 10	NONIN	10
RITM(office)	Finger Clip (pediatric) for Pulseoxymeter	Finger Clip (pediatric) for Pulseoxymeter 80000AP-1 x 20	NONIN	20
RITM(office)	Ambubag (pediatric)	BlueCross Emergency #CCRW-22P x 4sets	Bluecross	4
RITM(office)	Intubation Set (adult/infant)	BlueCross Emergency #ACICRW-22P x 4sets	Bluecross	4
RITM(office)	Blade for Optic Laryngoscope (No.00)	Blade for Miller Halogen Fiber Optic Laryngoscope (Size:00 , 36mm) #68065 ×4	Welch Allyn	4
RITM(office)	Blade for Optic Laryngoscope (No.0)	Miller Halogen Fiber Optic Laryngoscope (Size:0 , 53mm) #68060 x 4	Welch Allyn	4
RITM(office)	Blade for Optic Laryngoscope (No.01)	Miller Halogen Fiber Optic Laryngoscope (Size; #01, 80mm 68061) x 4	Welch Allyn	4
RITM(office)	Blade for Optic Laryngoscope (No.02)	Miller Halogen Fiber Optic Laryngoscope (Size; #2 133mm 68062) x 4	Welch Allyn	4
RITM(office)	PenLight Handle for Laryngoscope(slim)	PenLight Handle for Laryngoscope 2.5 V Penlight, uses two AA-size batteries # 60814 x 4	Welch Allyn	4
RITM(office)	Spare Lamps of Laryngoscope	06000-U 2.5V Halogen lamp	Welch Allyn	8
RITM(office)	Digital Thermometer for equipment	PC-3300	SATO	1
RITM(office)	Fiemaker Pro Ver 12. License	ENG, Version 12	FileMaker	1
RITM(office)	DeskTop PC	CPU: Msi, Mnitor: ANBONN, PGS, w. Window7 (ENG) & MS office home & student 2010 full product		1
RITM(office)	Tablet PC	iPad2Wifi 16GB BLK、iPad2Wifi 16GB WHT、i-Pad case	Apple	1
RITM(office)	DeskTop PC	w. Window7 (ENG) & MS office home & student 2010 full product	Oxygen	1
RITM(office)	Optional part of Pulse Oxymeter	PalmSAT 2500A	NONIN	1

Location	Name of Equipment	Manufacturer	Model	Quantity
RITM(Stock Room)	Freezer (medical)	MDF-U537D with AVR (Stavol 2KVA)	SANYO	1
RITM(Stock Room)	Digital Thermometer	OMRON MC-670	OMRON	9
RITM(Stock Room)	Agarose Gel Electrophoresis System	SubCell Agarose Gel Electrophoresis System #192, Toray ; 25×25㎝ Gel Caster, GE healthcare 'Power supply EPS301	Bio Rad, GE Healthcare	1
RITM(Stock Room)	Micropipette 20ul	Pipeteman 20ul	Gilson	1
RITM(Stock Room)	Micropipette 20ul	Pipeteman 20ul	Gilson	4
RITM(Stock Room)	Micropipette 100ul	Pipeteman 100ul	Gilson	7
RITM(Stock Room)	Micropipette 200ul	Pipeteman 200ul	Gilson	1
RITM(Stock Room)	Micropipette 200ul	Pipeteman 200ul	Gilson	5
RITM(Stock Room)	Micropipette 1000ul	Pipeteman 1000ul	Gilson	1
RITM(Stock Room)	Micropipette 1000ul	Pipeteman 1000ul	Gilson	5
RITM(Stock Room)	Pipet Aid	™ Express™ Pipet-Aid™ 357590, w stand & charging adptor	BD Falcon	3
RITM(Stock Room)	Micropipette 5ml	Shibata Nichiryo micropipette 5ml	Shibata	3
RITM(Stock Room)	Pipet Aid	Pipet-Aid XP, 110V charger	Dramond	2
RITM(Stock Room)	Micropipette Multi-channel	Nichipet 7000 50ul x1	Nichipet	1
RITM(Stock Room)	Vernier Micrometer Calipers	M-type, VC-15	AS ONE	3
RITM(Stock Room)	Air-conditioner	Koppel	KSW 12R5B	2

Annex 6: Project Design Matrix (PDM) version 2 (proposed by the Mid-term Review team)

Date: MM DD, 20YY

Project Title: The Project for Comprehensive Etiological and Epidemiological Study on Acute Respiratory Infections in Children: Providing Evidence for the Prevention and Control of Childhood Pneumonia in the Philippines

Project Duration: 5 years from April 1, 2011

Target Area: Republic of the Philippines

Target Group :

Direct Beneficiaries: Approximately XX researchers at the Research Institute for Tropical Medicine (RITM), the Department of Health

Indirect Beneficiaries: Approximately YY children under 5 years old

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions
Overall Objective			
Mortality due to childhood pneumonia is reduced.			
Project Purpose			
Etiology, disease burden and risk factors of childhood pneumonia are defined and effective interventions to reduce mortality due to pneumonia in children are validated.	1. New scientific findings related to prevention and control of childhood pneumonia are published in more than XX peer-reviewed internationally recognized scientific journals by the end of the peroject period. 2. Discussions with regard to the utilization of intervention pachage and/or policy advocacy for reducing child mortality due to pneumonia are started with relevant organizations such as the DOH by the time of the Terminal Evaluation.	1. Occasional reports, publication in peer-reviewed journals 2. Meeting minutes of discussions with the DOH and/or other relevant parties	

Outputs			
1 Etiology of childhood pneumonia and respiratory infections in the selected sites is determined.	1-1.By MM YYYY, the composition of identified bacterial and viral pathogens detected at sentinel sites. 1-2.By MM YYYY, the correlation of identified pathogens and severe pneumonia detected at sentinel sites.	1-1. Project reports 1-2. Publication in peer-reviewed journals	Childhood pneumonia remains a major public health problem in the country.
2 Disease burden due to childhood pneumonia is measured in the selected sites.	2-1.By MM YYYY, cohort study with sufficient statistical power is commenced for measuring of severe disease and deaths due to childhood pneumonia. 2-2. By MM YYYY, incidences of severe disease and deaths due to childhood pneumonia are determined in at least 2 communities.	2-1 Project Report	
3 Risk factors for severe pneumonia in children are identified.	3-1.By MM YYYY, etiological risk factors for severe pneumonia and deaths are identified. 3-2.By MM YYYY, other factors (e.g. health seeking behavior, knowedge state for infectious diseases, socio-economic backdrops, etc.) are identified through the cohort study.	3-1. Project reports 3-2. Publication in peer-reviewed journals	
4 Interventions to reduce mortality due to childhood pneumonia are evaluated.	4-1. By MM YYYY, contents of intervention, intervention method and evaluation method are determined. 4-2. By MM YYYY, intervention study to the target cohort is commenced. 4-3. By MM YYYY, intervention effects for reducing severe pneumonia and its feasibility are evaluated.	4-1. Project reports 4-2. Publication in peer-reviewed journals	
5 Research outcomes for the reduction of child mortality due to pneumonia are shared with Philippine and internetional relevant organizations	5-1. Progress and research outcomes are regularly shared amongst relevant organizations to the project throughout the project period. 5-2. By MM YYYY, a intervention package (incl. an operational guide, necessary materials and equipment and human resources, cost analysis, etc.) for reducing child mortality due to pneumonia is	5-1. Project reports 5-2. The Intervention Package	

Activities	Inputs		
1 Etiology of childhood pneumonia and respiratory infections in the selected sites is determined. 1-1. To establish appropriate laboratory capacity in the selected government hospitals for etiological studies. 1-2. To strengthen RITM capacity to detect, identify and analyze etiological agents of childhood pneumonia. 1-3. To establish sentinel sites in the selected primary health facilities for etiological studies. 1-4. To collect and test samples for bacteriological and viral pathogens from children with pneumonia and other respiratory infections. 1-5. To monitor the sample collection and testing at the sentinel sites.	Japan	Philippines	Support from hospitals and local governments is obtained
2 Disease burden due to childhood pneumonia is measured in the selected sites. 2-1. To establish a methodology to measure the incidence of pneumonia and pneumonia-associated deaths. 2-2. To analyze the data to measure the incidence of pneumonia and pneumonia-associated deaths.	1. Dispatch of experts (1) Chief Adviser (2) Project Coordinator (3) Virology (4) Public Health (5) Bacteriology (6) Epidemiology 2. Equipment Equipment, reagent and supplies necessary for research activities in the project 3. Training of counterparts in Japan: Hands-on training on laboratory and epidemiology	1 Assignment of personnel (1) Members of researchers' group (2) Administrative staff 2 Provision of office space 3 Utility charges 4 Cost-sharing for travel expenses for monitoring	
3 Risk factors for severe pneumonia in children are identified. 3-1. To establish and maintain an integrated database. 3-2. To identify risk factors using the data from etiology and disease burden studies.			

4 Interventions to reduce mortality due to childhood pneumonia are evaluated. 4-1. To develop methods for intervention studies to reduce mortality due to childhood pneumonia based on the results of the studies on etiology, disease burden and risk factors. 4-2. To work with national and local stakeholders to review current strategies on childhood pneumonia. 4-3. To conduct intervention studies in the selected communities. 4-4. To work with national and local stakeholders to evaluate new strategies to decrease burden of childhood pneumonia.			
5 Research outcomes for the reduction of child mortality due to pneumonia are shared with Philippine and internetional relevant organizations 5-1. To conduct meetings/workshops to disseminate the study results. 5-2. To disseminate the study results through international conferences and scientific journals. 5-3. To provide the Depatment of Health (DOH) National ARI Control Program with the findings and recommendations for policy formulation.			**Pre-Condition** 1. Research approvals are obtained from RITM. Tohoku University, EVRMC, ONP, BPH, and CHDs before starting respective research studies. 2. Local chief executives are informed of the Project. 3. Project is endorsed by chief of hospitals.

MINUTES OF MEETING
BETWEEN
JAPANESE MID-TERM REVIEW TEAM
AND
AUTHORITIES CONCERNED OF THE GOVERNMENT OF
THE REPUBLIC OF THE PHILIPPINES ON
THE JAPANESE TECHNICAL COOPERATION FOR
THE PROJECT ON
COMPREHENSIVE ETIOLOGICAL AND EPIDEMIOLOGICAL STUDY
ON ACUTE RESPIRATORY INFECTIONS IN CHILDREN: PROVIDING EVIDENCE
FOR THE PREVENTION AND CONTROL OF
CHILDHOOD PNEUMONIA IN THE PHILIPPINES

The Japanese Mid-term Review Team (hereinafter referred to as "the Team") organized by Japan International Cooperation Agency (hereinafter referred to as "JICA"), headed by Ms. Saeda Makimoto visited the Republic of the Philippines (hereinafter referred to as "the Philippines") from September 10th to September 25th, 2013 for the purpose of the Joint Mid-term Review of "the Project on Comprehensive Etiological and Epidemiological Study on Acute Respiratory Infections in Children: Providing Evidence for the Prevention and Control of Childhood Pneumonia in the Philippines" (hereinafter referred to as "the Project").

During their stay in the Philippines, the Team reviewed the achievement of the Project and had a series of discussions with authorities concerned of Department of Health of the Government of the Philippines (hereinafter referred to as "DOH") and Research Institute for Tropical Medicine (hereinafter referred to as "RITM") for further improvement of the Project.

As the result of the study and discussions, both sides agreed upon the matters referred to in the document attached hereto.

Alabang, 24th September, 2013

Ms. Saeda Makimoto
Leader
Mid-term Review Team
Japan International Cooperation Agency
Japan

Ms. Maylene Beltran
Director IV
Bureau of International Health Cooperation
Department of Health
The Republic of the Philippines

Witnessed by

Professor Dr. Hitoshi Oshitani
Department of Virology
Tohoku University
Graduate School of Medicine

Dr. Socorro P. Lupisan
Director III
Research Institute of Tropical Medicine
The Republic of the Philippines

ATTACHED DOCUMENT

Through the discussions regarding the progress of the Project with DOH, RITM, related organizations in the Philippines and JICA experts, the Team compiled the result of the Joint Mid-term Review as a Joint Mid-term Review Report attached hereto. At the same time, both the Philippine and the Japanese sides agreed the contents of the Joint Mid-term Review Report. The conclusion and recommendations are as follows:

1. Conclusion:

Advanced testing technologies such as isolation and identification of viral pathogens necessary for the project research activities have already been effectively transferred to RITM, and the Project has already obtained several scientific findings related to features of childhood pneumonia, such as significance of virus infection in child pneumonia. It is expected that many individual evidences will be obtained by analyzing a set of data from cohort survey and intervention study from many directions by the end of the Project.

However, because there has been about a year delay of implementation of studies of etiology, disease burden, and risk factor analysis, it is difficult to predict whether the validation of effective interventions to reduce mortality due to pneumonia in children (project purpose) could be achieved at the end of the Project.

To achieve the project purpose and expected outputs, the step-wisely designed study schedule should be adjusted to implement in parallel avoiding losing scientific validation. The Project should review the study schedule; start necessary preparation to meet to the schedule in collaboration with related organizations. The Project and JICA should manage the operation further sensitively and collaboratively not to make delay of activities. In addition, it is expected that both RITM and JICA experts (researchers) will further enhance capacity of field study; thus, it is desired that RITM as well as JICA experts (researchers) would put their efforts to analytical work of these studies on top of the operational management collaboratively. It is also important to promote dissemination of evidences to DOH and related partners, such as WHO and UNICEF.

2. Recommendations:

(1) The Project, ONP and JICA Philippines Office should monitor the generator installation work at ONP not to happen further delay so that the bacteriological testing result can be referred as scientific observations.

(2) Related to the fact the referential bacteriological analysis showed a low detection rate at all sentinel sites, there are still discussions on future direction of research on etiological study in bacteriology. The clinical and laboratory working group (Working Group A) should discuss and decide whether the Project will introduce other testing methods to improve the detection rate, considering various priorities in the Project and its resource limitation.

(3) The findings of the Project, such as the significances of virus infection in childhood pneumonia and the incidence of pertussis-related severe pneumonia, could be used by the policy making bodies as references for further reviewing strategy to reduce child mortality due to pneumonia in the Philippines, e.g. revising treatment guidelines, and evaluating cost-effectiveness of introduction of pneumococcal conjugate vaccines. The Project should disseminate the findings and develop an intervention package (incl. operational guide,

necessary materials and equipment and human resources, cost analysis, etc.) in a practical manner so that DOH and relevant organizations can easily assess the feasibility.

(4) The Project should collect information on various field activities by various actors that are related to the Project in order to check the feasibility of the approaches of intervention, and have close discussion with DOH and local health authorities to decide them. JICA should facilitate information exchange between JICA experts and actors such as DOH and JICA projects in the area of the maternal, newborn and child health.

(5) To secure two pneumonia epidemic seasons for follow-up period, the Project should take the following actions to start the intervention study as early as possible:
- To develop a complete schedule including detail activities and financial/human resource inputs, such as a Gantt chart, by the end of October 2013, considering timeline to reach consensus on intervention study, to get ethical approval etc.;
- To share the complete schedule with relevant parties to implement the planned activities collaboratively;
- To start the cohort study as early as possible; and
- To adjust the design of the intervention study based on new findings from the cohort analysis if necessary.

(6) The Project should discuss the appropriate allocation of input within the project budget balancing further research priority activities and necessary inputs including assignment of Japanese researchers.

(7) RITM should take necessary actions to develop an action plan on utilization of provided equipment to RITM and sentinel sites after the end of the Project by March 2014 in collaboration with the relevant parties (DOH, designated hospitals, LGU and CHD) and JICA experts.

(8) The latest PDM (version 1) should be revised; the indicators should be modified for better process management and to evaluate achievement of the Project Purpose and expected Outputs more precisely. The Team suggests that the Project should revise the PDM when the detailed schedule in the latter half of the Project are finalized, and submit it to JCC to get approved around April 2014. The Team offers a revision example as shown in the PDM attached hereto (Annex 6) for the sake of smooth implementation of revision work by the Project.

3. Other relevant issues:

Both sides agreed that the Project members should start discussions for the revision of the current PDM (version 1) based on a recommendation by the Team and ask for an endorsement at next JCC.

APPENDIX: Joint Mid-term Review Report

END

APPENDIX

JOINT MID-TERM REVIEW REPORT

ON

THE JAPANESE TECHNICAL COOPERATION PROJECT

FOR

THE PROJECT FOR

COMPREHENSIVE ETIOLOGICAL AND EPIDEMIOLOGICAL STUDY ON ACUTE RESPIRATORY INFECTIONS IN CHILDREN

UNDER

THE SCHEME OF SATREPS

Japan International Cooperation Agency (JICA)

and

Research Institute for Tropical Medicine

The Republic of the Philippines

24 SEPTEMBER 2013

TABLE OF CONTENTS

ABBREVIATIONS

AFTM	Asian Foundation for Tropical Medicine
ARI	Acute Respiratory Infection
BPH	Biliran Provincial Hospital
CHD	Center for Health Department
DOH	Department of Health
EVRMC	Eastern Visayas Regional Medical Center
IMCI	Integrated Management of Childhood Illness
IRB	Institutional Review Board
JCC	Joint Coordination Committee
JICA	Japan International Cooperation Agency
JST	Japan Science Technology Agency
M/M	Minutes of Meetings
MDG	Millennium Development Goal
MOA	Memorandum of Agreement
ODA	Official Development Assistance
ONP	Ospital ng Palawan
PCM	Project Cycle Management
PCR	Polymerase Chain Reaction
PDM	Project Design Matrix
PO	Plan of Operations
R/D	Record of Discussions
RHU	Rural Health Unit
RITM	Research Institute for Tropical Medicine
SATREPS	Science and Technology Research Partnership for Sustainable Development
UNICEF	United Nations Children's Fund
WHO	World Health Organization

CHAPTER 1 SCOPE OF MID-TERM REVIEW

1.1 Background of the Mid-term Review

Severe respiratory infections such as pneumonia are raging in developing countries and account of e 25 to 30 percent deaths in children. At the same time, it closely related one of the Millennium Development Goals, "*Reduce by two thirds, between 1990 and 2015, the under-five mortality rate*". Actually, it is estimated that about 2 million children die each year due to pneumonia in the world and 95 percent of it happen mainly in developing countries. Even though, actual situation especially virus infection is not so clear.

Under the circumstances, the republic of the Philippines (herein after referred to as "*Philippines*") officially request to Japan as technical cooperation project under the scheme of the Science and Technology Research Partnership for Sustainable Development (SATREPS) titled "*The Project for Comprehensive Etiological and Epidemiological Study on Acute Respiratory Infections in Children: Providing Evidence for the Prevention and Control of Childhood Pneumonia in the Philippines*" (hereinafter referred to as "*the Project*") and Tohoku University Graduate School of Medicine (herein after referred to as "*Tohoku University*") also submitted the research proposal to the Japan Science Technology Agency (herein after referred to as "*JST*"). As a result of discussion between the Ministry of Education, Culture, Sports, Science and Technology, the Ministry of Foreign Affairs, the JST and the Japan International Cooperation Agency (referred to as "*JICA*"); it adopted the proposal officially and determined to start the five-year Project from April 2011 to Mach 2016.

The Project is jointly conducted by the Research Institute for Tropical Medicine (referred to as "*RITM*") and Tohoku University to analyze the childhood pneumonia in the Philippines through etiological studies, disease burden studies, risk factor analysis and present the effective treatment and prevention by intervention studies. The Project mainly conducted in the fields in the Philippines where under five mortality ratio is still highly suspended in 31 per 1,000 live births in the year when the Project had commenced (2011), and pneumonia is top ranked as a death cause in children.

The Joint Mid-term Review will be conducted to evaluate performance and achievements of the Project and make some recommendations to offer solution against current challenges and direction of the Project for the rest of the project period.

1.2 Objectives of the Mid-term Review

The objectives of the Mid-term Review are as follows:

1) To review the interim progress of the Project and evaluate the achievement as of the time of the Mid-term Review in accordance with the five evaluation criteria on the basis of latest version of Project Design Matrix (PDM) version 1 (Annex 1);
2) To discuss the contributing and inhibitory factors for the achievements of the Outputs and the Project Purpose;
3) To discuss the plan for the Project for the rest of the project period together with the Philippine side based on reviews and analysis of the project performances;
4) To make recommendations in order to achieve the Project Purpose and envisaged Overall Goal[1], and to revise the PDM as necessary basis; and
5) To summarize the results of the study in the Joint Mid-term Review Report.

[1] Overall Goal isn't set under the framework of SATREPS

1.3 Joint Review Team

Review of the Project was jointly conducted with three (3) Philippine members. The members of Joint Review Team (hereinafter referred to as "*the Team*") were indicated below.

Simultaneously with the JICA's review, JST, supporting research activities conducted in Japan under the framework of SATREPS, dispatched two (2) members and participated in the field survey in the Philippines to conduct their mid-term evaluation and to offer several expert advices on the research activities from technical standpoint.

<Japanese Side>

Name	Designation	Title and Affiliation	Duration of Survey
Saeda MAKIMOTO/Ms.	Leader	Director, Health Division 3, Health Group 2, Human Development Department, JICA	Sep.17, 2013 – Sep. 24, 2013
Masanori ABE /Mr.	Cooperation Planning	Program Officer, Health Division 3, Health Group 2, Human Development Department, JICA	Sep.17, 2013 – Sep. 25, 2013
Yoichi INOUE /Ph.D.	Evaluation Analysis	Senior Consultant, Consulting Division, Japan Development Service Co., Ltd.	Sep.10, 2013 – Sep. 25, 2013

<Philippine Side>

Name	Title and Affiliation
Dr. Madeleine de Rosas-Valera	Under Secretary of Health, Health Policy Finance and Research Development Cluster, the Department of Health (DOH)
Ms. Maylene Beltran	Director, Bureau of International Health Cooperation, DOH
Dr. Juanita A. Basilio	Medical Officer, Family Health Office, Women, Children and Family Health Cluster, DOH

<JST Mission Members>

Name	Designation	Title and Affiliation	Duration of Survey
Takeshi KURATA /M.D., Ph.D.	Infectious Disease Control	Program Officer of JST - SATREPS Professor, International University of Health and Welfare, Shioya Hospital (Observer)	Sep.19, 2013 – Sep. 21, 2013
Masayuki SATO / Mr.	Planning and Evaluation	Principal Researcher, Research Partnership for Sustainable Development Division, JST (Observer)	Sep.17, 2013 – Sep. 22, 2013

The evaluation survey was conducted from September 10 to 24, 2013. The investigation period was used for site visits, interviews and scrutinizing various documents and data related to planning, implementation and monitoring processes of the Project (Annex 2).

1.4 Framework of the Project

The Narrative Summary of the Project (Project Purpose, Outputs and Activities) set in the latest PDM (version 1, February 14, 2011) is described below.

Narrative Summary of PDM version1

Overall Goal	Reduction of mortality due to childhood pneumonia.
Project Purpose	Etiology, disease burden and risk factors of childhood pneumonia are defined and effective interventions to reduce mortality due to pneumonia in children are validated.
Outputs	Output 1 Etiology of childhood pneumonia and respiratory infections in the selected sites is determined. Output 2

	Disease burden due to childhood pneumonia is measured in the selected sites. Output 3 Risk factors for severe pneumonia in children are identified. Output 4 Interventions to reduce mortality due to childhood pneumonia are evaluated. Output 5 Study results are presented for modifying/updating strategies for the control of childhood pneumonia.
Activities	Activities under Output 1 1-1. To establish appropriate laboratory capacity in the selected government hospitals for etiological studies. 1-2. To strengthen RITM capacity to detect, identify and analyze etiological agents of childhood pneumonia. 1-3. To establish sentinel sites in the selected primary health facilities for etiological studies. 1-4. To collect and test samples for bacteriological and viral pathogens from children with pneumonia and other respiratory infections. 1-5. To monitor the sample collection and testing at the sentinel sites. Activities under Output 2 2-1. To establish a methodology to measure the incidence of pneumonia and pneumonia-associated deaths. 2-2. To analyze the data to measure the incidence of pneumonia and pneumonia-associated deaths. Activities under Output 3 3-1. To establish and maintain an integrated database. 3-2. To identify risk factors using the data from etiology and disease burden studies. Activities under Output 4 4-1. To develop methods for intervention studies to reduce mortality due to childhood pneumonia based on the results of the studies on etiology, disease burden and risk factors. 4-2. To work with national and local stakeholders to review current strategies on childhood pneumonia. 4-3. To conduct intervention studies in the selected communities. 4-4. To work with national and local stakeholders to evaluate new strategies to decrease burden of childhood pneumonia. Activities under Output 5 5-1. To conduct meetings/workshops to disseminate the study results. 5-2. To disseminate the study results through international conferences and scientific journals. 5-3. To provide DOH National ARI Control Program with the findings and recommendations for policy formulation.

CHAPTER 2 EVALUATION PROCESS

2.1 Framework of Project Evaluation under the Scheme of SATREPS

Since SATREPS provides assistances to the counterpart-countries through the technical and financial support for research works by JST and the implementation of technical cooperation project on site by JICA in a collaborative manner, it is natural that review and evaluation works on site are conducted in tandem in consideration of its efficiency.

JST will evaluate the whole of international joint research works from the viewpoint of research outcomes that contribute to resolve the global issues. JICA, jointly with governmental organizations and/or research institutes including researchers, will review and evaluate the performance and achievement of the technical cooperation project implemented under the framework of the Japan's ODA from the viewpoint of human resource development and contribution to development agenda at partner countries.

2.2 Methodology of Evaluation

The Mid-term Review was conducted in accordance with the latest "*JICA Guidelines for Project Evaluations*" issued in June 2010. Achievements and implementation process were assessed based on the investigation results, which are consolidated in the evaluation grid (Annex 3), from the aspects of the five evaluation criteria of relevance, effectiveness, efficiency, impact, and sustainability, as well as the Verification of Implementation Process.

The Team conducted surveys at the project sites through questionnaires and interviews to counterpart researchers, other related organizations, and the Japanese experts involved in the Project to review the Project on the basis of the evaluation grid. The list of persons interviewed is found in Annex 4.

Project performances including achievement of the Objectively Verifiable Indicators (OVIs) were reviewed and analyzed in accordance with the Project Cycle Management (PCM) concept. The review work was jointly performed by both the Japanese and the Philippine sides on the basis of PDM version 2 (See Annex 6 for more information). Finally, the Team compiled this Joint Review Report.

2.3 Five Evaluation Criteria

Description of the five evaluation criteria that were applied in the analysis for the Mid-term Review is given in Table 1 below.

Table 1: Description of Five Evaluation Criteria

Five Criteria	Description
Relevance	Relevance of the Project is reviewed by the validity of the Project Purpose and Overall Goal in connection with the government development policy and the needs in the Philippines. Relevance of the Project is verified on the basis of facts and achievements at the time of the Mid-term Review.
Effectiveness	Effectiveness is assessed to what extent the Project has achieved its Project Purpose, clarifying the relationship between the Project Purpose and Outputs. Effectiveness of the Project is verified in accordance with the necessity and possibility at the time of the Mid-term Review.
Efficiency	Efficiency of the Project implementation is analyzed with emphasis on the relationship between Outputs and Inputs in terms of timing, quality and quantity. Efficiency of the Project is verified on the basis of facts and achievements at the time of the Mid-term Review.
Impact	Impact of the Project is assessed in terms of positive/negative, and intended/unintended influence caused by the Project. Impact of the Project is verified in accordance with the necessity and possibility at the time of the Mid-term Review.
Sustainability	Sustainability of the Project is assessed in terms of political, financial and technical aspects by examining the extent to which the achievements of the Project will be sustained after the Project is completed. Sustainability of the Project is verified on the basis of extrapolation and expectation at the time of the Mid-term Review.

CHAPTER 3 PROJECT PERFORMANCE

3.1 Inputs

1) Input from the Japanese Side

The following are inputs from the Japanese side to the Project as of 31 March 2013. See Annex 5 for more information.

Components	Inputs
Dispatch of Japanese Experts	JICA Experts: a total of three (3) Project Coordinator (2011/09/26-2013/02/07、2013/02/12-2013/06/11、2013/06/02-2015/06/01) Other Experts (researchers): 34 Experts Total duration of experts excluding Project Coordinators: 19.7 M/M (Funded by JST: 2.5MM、Funded by JICA: 17.2MM(As of March 31, 2013)
Provision of Equipment	Approx. JPY 114 million (≒ USD 1.16 million / PHP 51.8 million)[2] Medical apparatus such as Pulse Oximater, Blood pressure monitors, electronic thermometers, stethoscopes and Otoscopes. Experiment-related instruments and equipment such as Real-time PCR system, Thermal Cyclers, Deep freezers, freezers, Biosafety cabinets, Autoclaves, CO_2 incubators, Freeze dryers. Other necessary items such as Reagents, reference books, PCs, etc.
Training in Japan	Total number: 17 persons Content: Epidemiological study, Diagnosis of atypical pneumonia, Isolation of causative viruses for respiratory infectious diseases Total days: 64 days
Local costs	Sum total for overseas activities costs: JPY 34,590,000 (≒ USD 352,815 / PHP15,723,000) (April, 2011-March, 2013) – JFY2011: JPY 8,533,000 – JFY2012: JPY 26,057,000
Others	Hiring costs for laboratory and field staffs (48 persons in total): JPY51,133,000(≒ USD521,552 / PHP23,242,272) (April, 2011-March, 2013)

2) Input from the Philippine Side

The followings are inputs from the Philippine side to the Project as of March 2013. See details on the Annex 5.

Components	Inputs
Allocation of Counterpart Researchers	RITM: 17 persons – Administration: 4 persons – Working Group A (Hospitals): 7 persons – Working Group B (Field studies and data collection/analysis): 4 persons – Working Group C (Sentinel site): 2 persons Eastern Visayas Regional Medical Center (EVRMC): 1person (Chief of hospital) Biliran Provincial Hospital (BPH): 1person (Chief of hospital) Palawan Hospital (Ospital ng Palawan: ONP) 1person (Chief of hospital)
Facilities, Equipment and Materials	1. Office space & warehouse in RITM 2. Research space at RITM (Microbiology, Virology, Molecular biology) 3. Laboratory space exclusively for the Project at EVRMC, BPH and ONP 4. Existing equipment for research activities such as Biosafety cabinet, Incubator, Refrigerator, Vortex Mixer ,Loop incinerator
Local costs	Utility Costs Approx.: paid by the Philippine side, but amount exclusive for the Project is not available.

[2] JICA Conversion rates as of September 2013 (1PHP≒2.2JPY、1USD≒98.04JPY) were used for approximate estimates.

3.2 Achievements of the Project

1) Achievements of the Project Activities

Achievements of the Project Activities under Outputs are as indicated below.

Output 1 Etiology of childhood pneumonia and respiratory infections in the selected sites is determined.	
Activities	Performances
1-1. To establish appropriate laboratory capacity in the selected government hospitals for etiological studies	● Bacteriology laboratories have been set up for the bacteria culture in BPH and ONP where there were no functional bacteriology labs. Renovation and procurement for necessary equipment in each site have been completed. ● However, full-scale implementation is delayed at the ONP due to delay in installment (esp. Power distribution work) of a generator for avoiding power interruption of CO2 incubator for blood culture.
1-2. To strengthen RITM capacity to detect, identify and analyze etiological agents of childhood pneumonia	● Equipment and technology transfer have been provided to several departments (virology / bacteriology / molecular biology) in RITM. Viral isolation efficacy has been improved and some viruses such as Influenza C have been isolated for the first time in the Philippines. Capacity for molecular analysis has also been strengthened including sequence analyses of viruses and bacterial and detection of bacteria causing atypical pneumonia with PCR. ● Two staff in RITM had been trained on viral and bacteriological technique in Tohoku University for 2 months in 2011 for capacity building, who are now playing important role in each department in RITM.
1-3. To establish sentinel sites in the selected primary health facilities for etiological studies	● Leyte provincial hospital and Tanauan RHU (Rural Health Unit), catchment areas of EVRMC, have been set up as sentinel sites. ● Two (2) RHUs (i.e., Kawayan and Caibiran) in the cohort sites are determined and being set up as a sentinel site by October 2013
1-4. To collect and test samples for bacteriological and viral pathogens from children with pneumonia and other respiratory infections	● Sample collection from the patients and laboratory testing have been conducted since April 2011 to July 2013 as below: – EVRMC: Total number of patient: 1366/ Start on April 2011 – ONP: Total number of patient: 473/ Start on August 2012 – BPH: Total number of patient: 431/ Start on September 2012 – RITM: Total number of patient: 68/ Start on September 2012 ● A total of 793 samples from the patient with acute respiratory symptoms in the sentinel sites in Leyte have been tested for viral pathogens. ● Though bacteriological analysis is carried out, the said analysis at BPH and ONP is behind the schedule due to the delay of installation work of generators for avoiding power interruption of CO_2 incubator for blood culture.
1-5. To monitor the sample collection and testing at the sentinel sites	● A total of 54 regular monitoring visits by RITM and Tohoku University (JICA expert) have been conducted since April 2011 to July 2013.

Output 2 Disease burden due to childhood pneumonia is measured in the selected sites.	
Activities	Performances
2-1. To establish a methodology to measure the incidence of pneumonia and pneumonia-associated deaths	● In collaboration of RITM and JICA experts (researchers), a methodology on the disease burden study has been developed. Cohort sites have been selected as a study design to analyze accurate incidence of pneumonia, which is composed of 2 series surveys, i.e., rapid assessment for the selection of cohort sites and cohort survey itself with prospective follow-up of children。

2-2. To analyze the data to measure the incidence of pneumonia and pneumonia-associated deaths	● To assess the feasibility of the methodology and to select the cohort sites, a household rapid assessment including the demographic data, socioeconomic status, risk factors, pneumonia incidence (per person-year) and health seeking behavior of the caregiver was conducted. ● Based on the result, 25 barangays in 2 municipalities in Biliran province were selected as cohort study sites and enrollment process for under-5 years of age in the sites has just completed at the time of the Mid-term Review (Cohort size: Approx. 2,500).

Output 3 Risk factors for severe pneumonia in children are identified.	
Activities	Performances
3-1. To establish and maintain an integrated database	● A database was developed for etiological study. Training on the data management (including double entry system) has been provided and double encoding data entry is being done by the staff in the sentinels on regular basis. ● The data management system with a newly set-up sever in RITM is being updated for the cohort for the uniformed data management at the time of the Mid-term Review.
3-2. To identify risk factors using the data from etiology and disease burden studies	● Basic information regarding risk factors for childhood pneumonia was obtained by the rapid assessment conducted in 2012. ● At the time of the Mid-term review, the cohort study has just started in the selected sites, and staff training for cohort study is scheduled in October 2013.

Output 4 Interventions to reduce mortality due to childhood pneumonia are evaluated.	
Activities	Performances
4-1. To develop methods for intervention studies to reduce mortality due to childhood pneumonia based on the results of the studies on etiology, disease burden and risk factors	● Since the intervention method and/or protocol are supposed to be determined on the basis of the results from the rapid assessment as well as the cohort study under the Output 3, no specific result is obtained as of the time of the Mid-term review. ● However, for the efficient utilization of remaining project period, the Project has started to discuss about envisaged intervention on the basis of the etiological analysis and the rapid assessment under Output 1 and 2, l respectively.
4-2. To work with national and local stakeholders to review current strategies on childhood pneumonia.	● It was confirmed that the strategy for the childhood acute respiratory infection would be discussed with the Department of Health (DOH). A focal point in DOH was appointed for this project since July 2013.
4-3. To conduct intervention studies in the selected communities.	● See activity 4-1.
4-4. To work with national and local stakeholders to evaluate new strategies to decrease burden of childhood pneumonia.	● See activity 4-1.

Output 5 Study results are presented for modifying/updating strategies for the control of childhood pneumonia.	
Activities	Performances
5-1. To conduct meetings/workshops to disseminate the study results.	• Annual research forums were conducted in 2011 and 2012 at RITM. • Feedback forums were carried out in Leyte island and Biliran island in 2012.
5-2. To disseminate the study results through international conferences and scientific journals.	• Results of the isolation and sequence of RS virus was published in the Journal of Clinical Virology. • A scientific report with regard to the results of the isolation and analysis on Enterovirus 68 was published on the PLoS One on the 20th of September, 2013.
5-3. To provide DOH National ARI Control Program with the findings and recommendations for policy formulation.	• The project has started to discuss with a resource person of CARI program from DOH to provide findings; recommendations for policy formulation; nevertheless, will be made after the intervention study results are obtained.

2) Achievements of the Outputs

a) Output 1

In the etiological studies, the Project established the mechanism which the laboratories in each sentinel site conduct some blood tests and bacteria culture and they transfer the samples to the RITM for virological testing. In addition, the system for pathogen analysis in the RITM had been strengthened by technical advice from Japanese experts to the RITM researchers, installation of some research instrument and equipment, and laboratory renovations. At the 4 sentinel hospitals, sample collection from pediatric patients of respiratory tract infection with their basic information had been commenced. In parallel, the Project is planning to collect samples from pediatric patients with respiratory tract infection (esp. severe cases including relatively mild cases) at RHUs in the catchment areas of the EVRMC and BPH; already, this activity has commenced at EVRMC catchment area from April 2011. For these reasons, it is confirmed that a series of etiological research system (sample collection, transfer, laboratory testing and analysis) is established by the time of the Mid-term Review.

In the etiological studies, analysis of causative virus for childhood pneumonia has been done in RITM and bacteriological test has been done in four sentinel sites including RITM. However, installation of some generators for a stable electrical provision to laboratory instrument and equipment such as the CO_2 incubators in BPH and ONP has been delayed so that the bacteriological tests in these two sites has also delayed as planned. The Project found out that the positive rate of bacterial culture wasn't so high though the *Bordetella Pertussis* was detected using the PCR method as a result of bacteriological analysis. The Project concluded that about 40 percent among the child patients had received antibiotics prior to admission, which might affect the detection of bacteria by culture from the samples. Even though the Project conducted the bacteriological identification to selected samples using PCR method to increase the detection rate, there are only a few percent of them were positive for bacteria in the blood by PCR. Essentially, it is difficult to conduct bacteriological test from the technical perspectives, since the volume of blood collected from children is limited and they can't extract sputum by themselves. Therefore the Project, especially the clinical and laboratory working group (Working Group A) should discuss to show the clear direction of the etiology studies regarding bacteriology. Meanwhile, the Project identified RS virus in approx. 30% of respiratory samples from pediatric patients with clinical diagnosis. From this finding of the Project, the significance of viral infection (esp. RS virus) is strongly suggested as one of cause of

childhood pneumonia in the Philippines.

Achievements of the Output 1 are as indicated below.

【Output 1】
Etiology of childhood pneumonia and respiratory infections in the selected sites is determined.

OVIs	Achievements
1-1. Composition of identified bacterial and viral pathogens detected at 4 sentinel sites	● Viral detection from each sentinel hospitals are as follows: – Adenovirus (0.5%), CMV (1.1%), Enterovirus (1.1%), Influenza A (H3N2) (0.5%), Influenza A (H1N1) pandemic (0.5%), Influenza B (2.7%), Influenza C (0.1%), hMPV (2.4%), Rhinovirus (5.1%), RSV (29.1%), combined infection (1.9%) ● Bordetella pertussis, which is recently emerging worldwide, has been detected in 10 children in ONP and RITM.
1-2. Correlation of identified pathogens and severe pneumonia detected at 4 sentinel sites	● Defining the viruses associated with severity of disease, , risk factor analysis will be performed with the background information of the patients (including two fatal cases) from the cohort study.

b) Output 2

In light of upcoming intervention study to reduce the impact of childhood pneumonia, the Project has selected the Biliran province as the target site of disease burden study, and proceeding field surveys as of the time of the Mid-term Review. In 2012, the Project conducted the rapid household assessment to grasp the incidence of severe pneumonia at whole Biliran Island and to collect data such as socio-economic background, health seeking behavior, etc. for the analysis of risk factors for advancing severe illness. The results showed that contribution of pneumonia to mortality is rather limited whereas the incidence of the severe pneumonia as high in the Biliran Island. On the basis of the survey, the Project assigned 25 barangays under 2 municipalities in the in the Biliran province as cohort sites, and developed an implementation protocol for the cohort study. The ethical approval was given to the protocol at each RITM and Tohoku University, and the Memorandum of Agreement (MOA) for the whole study was exchanged between RITM and the Biliran Province in September 2013.

The cohort study for the disease burden analysis was supposed to be done on the basis of rapid household assessment; nevertheless, the commencement of the study is behind schedule. Though it took certain amount of time to develop the protocol due to close discussions for developing the protocol, ethical approval process by the Institutional Review Board (IRB) and the exchange of MOA, the Project has developed it on the basis of available information of the etiological analysis and the rapid assessment results as of the time of the Mid-term Review.

Achievements of the Output 2 are as indicated below.

【Output 2】
Disease burden due to childhood pneumonia is measured in the selected sites.

OVIs	Achievements
2-1. Incidence of severe disease and deaths due to childhood pneumonia determined in at least 2 communities	● To assess the feasibility on the study design, methodology and to select the cohort sites, a household rapid assessment was conducted, and 842-pneumonia suspected cases were identified in the eligible under-6 population of 5,335 persons at the randomly selected sites Demographic data, socioeconomic status, risk factors of pneumonia, and health seeking behavior of the caregiver was collected. Pneumonia incidence (per person-year) was estimated from previous year history.

	Based on the results, 64% of patients who met the criteria of severe pneumonia could not seek hospital care. Of these, financial reason accounted for 40%. ● Based on the results, 25 barangays under 2 municipalities were selected and the enrollment process has just completed at the time of the Mid-term Review (cohort size is approx. 2,500).

c) Output 3

A network environment was constructed by setting up Internet connection at RITM and all sentinel sites. At the moment, the Project is doing system construction work for risk factor analysis using etiological and disease burden analysis in light of upcoming intervention study. The Project is being at work for developing a system for monitoring data from sentinel hospitals and field activities; the system can be utilized as infectious disease surveillance as well.

Meanwhile, the Project hasn't reached at the identification of risk factors for severe childhood pneumonia with sufficient evidences due to the aforementioned backdrops as of the time of the Mid-term Review. By taking the remaining project period into consideration, the Project is accelerating preparation work for the cohort study on the basis of currently available information such as analysis results of the etiological study as well as the rapid household assessment.

Achievements of the Output 3 are as indicated below.

【Output 3】 Risk factors for severe pneumonia in children are identified.	
OVIs	Achievements
3-1. Risk factors and host factors for severe pneumonia and deaths (e.g. etiology, demography) assessed and identified	● Risk factors for the severe pneumonia will be analyzed henceforward. Results from the rapid assessment have indicated the possible risk factors such as socioeconomic status and delay in seeking hospital care. Further detailed analysis will be performed through the forthcoming cohort study with regard to risk factors.

d) Output 4

The Project grasped an outline of possible risks for childhood pneumonia as well as other related information such as health seeking behavior from the results from the rapid household assessment conducted in 2012. In advance of the cohort study, the Project also evaluated the actual situation of primary healthcare system from various aspects, by taking opportunity of the census. As aforementioned, the intervention study was supposed to be designed on the basis of results from risk factor analysis under the Output 3, but evidence-based intervention hasn't been commenced as of the time of the Mid-term Review.

The Project had just started designing the intervention study using basic information such as the said surveys in light of current progress of the project activities as well as remaining project period, in order to commence it by the year of 2014. Although having said that, it is desired that the intervention study shall be done based on the analytical results of risk factors with evidences as high as possible. Notably, it is necessary to secure intervention period as long as possible (two epidemic seasons at least) in order to measure the intervention effects more precisely; hence, the Project put their efforts to start the intervention study as early as possible by amending the preliminary-designed interventions by reflecting the analysis results of the cohort study where needed.

Achievements of the Output 4 are as indicated below.

【Output 4】
Interventions to reduce mortality due to childhood pneumonia are evaluated.

OVIs	Achievements
4-1. List of new evidences/findings gathered from the study that results in reducing mortality from childhood pneumonia.	● Interventions to reduce the mortality of severe pneumonia are now under discussion with 2 possible intervention plans: (1) Improvement of the current referral system; (2) Development of algorism using a severity index for early identification of the patients who would develop severe pneumonia.

e) Output 5

As summarized in the achievements of OVIs below, achievements of the project activities including research outcomes has been shared amongst relevant parties with annual research forums, feedback forums at the Biliran and Leyte provinces so far. In addition to this, two scientific articles with regard to project research outcomes were published in the international journals; and also, oral and poster presentations were made at domestic and/or international scientific conferences. It is highly anticipated that the Project would come out with many research outcomes via scientific journals, conferences and so on.

Meanwhile, developing works of an intervention package, the OVI for the Project Purpose, will be done in the last year of the project period; thus, it doesn't fallen into evaluation as of the time of the Mid-term Review. However, identification of risk factors and subsequent intervention study is far behind schedule. The Project is required to develop a blueprint for sound achievements such as representing the intervention package and policy advocacy for the reduction of child mortality due to pneumonia by the end of the project period.

Achievements of the Output 5 are as indicated below.

【Output 5】
Study results are presented for modifying/updating strategies for the control of childhood pneumonia.

OVIs	Achievements
5-1. Improved intervention package is developed to recommend to national and local stakeholders.	● Annual research forum in 2011 and 2012, and feedback forums in Tacloban, Leyte and Naval, Biliran provinces in 2012 were held. Academic achievement is listed below: (1) Publication (International peer-reviewed: 2) (2) Academic meeting – Invited lectures (International 3, National 2) – Oral presentation (International 3, National 2) – Poster presentation (International 9, National 0)

3) Achievements of the Project Purpose

As was described at the "*Achievements of Outputs*" section, individual evidences had been gained with regard to identification of viruses from pediatric patients with pneumonia at sentinel sites as well as its genetic analysis, whereas, the progress of whole project is behind schedule in approx. one year as of the time of the Mid-term Review. Hence, it is of big concern that implementation period of the evidence-based intervention study, which is the most important component of the Project, might be limited accordingly.

As a countermeasure for this, the Project is reinforcing their efforts to conduct the intervention study and gain research outcomes with evidences as high as possible by rearranging implementation process of the project activities.

【Project Purpose】 Etiology, disease burden and risk factors of childhood pneumonia are defined and effective interventions to reduce mortality due to pneumonia in children are validated.	
OVIs	Achievements
1. New evidences obtained for prevention and control of childhood pneumonia through appropriate methods (e.g. Study design, sample size, study assumption, analytical methods)	● The Project has started discussions about envisaged interventions including contents, methodology and indicators for measuring outcomes as of the time of the Mid-term Review. Results from the cohort study will be used for developing/amending the intervention ● With the rapid assessment result, RHU is anticipated to be a target for the intervention for early identification, early diagnosis, and early referral, considering the patient preference of choice, feasibility, sustainability and health system policy. Educational intervention in the community is another option.

3.3 Implementation Process

1) Progress of Activities

As mentioned above, some activities of the Project are behind schedule for about one year as it planned. In particular, at the moment of the Detail Design Planning Survey, conducted in August 2010, it was supposed to complete the singing of Record of Discussion (herein after referred to as "R/D") between the JICA and the Philippine side in January 2011, launch the Project and dispatch a Project Coordinator in February 2011. However, the plan was subject to change as follows: the R/D was signed in March 2011; the Project had got started in April 2011; and a Project Coordinator was dispatched in September 2011. In addition, procurement of necessary equipment for the Project had started immediately after the commencement of the project; however, stetting-up of the laboratories and operation for the power distribution work for the back-up generators were delayed at BPH and ONP. Currently, the generator at BPH has already been at work, but the Project still have to wait for the completion of the installation work of generator set-up at ONP until this November or even later. This affected the bacteriological culture test at the said two sites to some extent. Furthermore, it took a certain amount of time to prepare the proposals for each component, to obtain an ethical approval for it and to sign up the. Memorandum of Agreement (MOA) for the study in the Biliran province. The series of these factors caused some delay for upcoming intervention study, which was supposed to start in April 2013.

Now the Project has started to have some discussion for rearranging their research activity plan after the Mid-term Review to catch up on their initial plan by taking the quality of expected research outcomes into consideration. On their previous plan, the Project plans to put their effort on final analysis, preparation of scientific papers and presentation of effective intervention to the national and local stakeholders rather than intervention activities. As a countermeasure for this the Project planning to conduct the intervention study in parallel with other research activities in order to ensure the follow-up period of the intervention study as long as possible. The Project is expected to make a detailed plan, which describes the personals and budget allocation for each fiscal year so as to conduct the intervention study in the final year of the Project. Besides, the Project should take the time required got obtaining an ethical approval for the intervention study into consideration when they rearrange the activity plan.

2) Project Management and communication amongst parties concerned

As it was mentioned above, each research activity has been conducted as it stated in PDM version I signed in February 2011, in spite of the delays. The JCC meeting had been convened for three times so far, and research progress and whole project management have been discussed regularly. In addition, the activities in the local sites such as EVRMC, BPH and ONP has been monitored by both Japanese and Philippine researchers once a month at least; technical supervision was also done by taking that opportunities. Information regarding data collection and tests result are shared via weekly reports made by both RITM and Japanese researchers.

On the other hand, it took time to discuss on the detailed cost burden for both the Philippine and the Japanese sides despite the fact that the outline of the cost sharing had confirmed in the R/D up-front. Now the gap in perception between both sides is narrower than before.

Therefore, the management of the project activities and communication amongst implementers of the Project has properly been maintained from the perspectives of "*progress monitoring*", despite some delays had happened after commencement of the Project. However, the Outputs of Project have designed and structured to be proceed one after another as follows: "Etiology Studies (Output 1)" and "Disease Burden Studies (Output 2)" would be conducted interactively; "Risk factor analysis (Output 3)" is done based on the former results; and "Intervention Study (Output 4) is finally done based on the all the findings and observations. Therefore, it might have a risk for substantial delay to the whole progress of the project activities in case that even one point in the Output flow was interrupted. In fact, the Project had discussions amongst relevant parties for each issue so far, and resulting in approx. one-year delay. It might have avoided by taking immediate and appropriate countermeasures for solutions in a timely manner. In other words, the Project and JICA should have had a regular and closer communication, implying the existence of the problem from the aspect of "*progress control*".

3) Ownership and Autonomy

RITM has been demonstrating strong ownership for operating and organizing the project research activities. Best of all, RITM had been proactive in developing implementation protocols for the Rapid Assessment as well as the census. In addition to that, RITM has been taking initiative for conducting bacteriological testing, and JICA experts (researchers) has been accustomed to provide indirect support for it.

CHAPTER 4 EVALUATION RESULTS

4.1 Relevance

The relevance of the Project is highly maintained as of the time of the Mid-term Review

1) Consistencies of the Project Purpose with the Philippine Health Policies and the needs of target groups

With regard to the consistencies of the consistency of the Project Purpose with the Philippine Health Policies as well as the needs of the target groups that were confirmed at the Ex-ante Evaluation of the Project in December 2008, there wasn't any alteration of the Philippine health policies as well as the needs so as to undermine the relevance of the Project, that is to say, the consistencies are being maintained at the time of the Mid-term Review.

2) Consistency of the Project Purpose with Japan's Aid Policy

By the same token, there wasn't any alteration in the Japan's aid policies so as to undermine the relevance of the Project with regard to the consistency of the Project Purpose with Japan's Aid Policies that was confirmed at the Ex-ante Evaluation, that is to say, the consistency is being maintained at the time of the Mid-term Review.

3) Appropriateness of implementation method

① Rationale of hiring project staff by the Project for the implementation of project activities including bacteriological testing

In the general technical cooperation project supported by JICA, human resources for project activities shall be allocated by counterpart organization from the aspect of human resource development. Meanwhile, day-to-day sample collection in large numbers and subsequent bacteriological testing, as well as pre-treatment and shipment of samples for further examination have been carried out at 4 sentinel sites. On top of those, the Project had conducted relatively large-scale field surveys at communities such as the rapid household assessment so far. For the cohort and subsequent intervention studies, 2,612 community children has been enrolled to the cohort, and are followed up on incidence of respiratory react infection, health seeking behavior, life environment etc. for two years after the commencement of the cohort survey. It is infeasible for the Project to expect Philippine local health workers to do such a tremendous workload on top of their daily duties. For these reasons, rationale of hiring staffs by the Project for the implementation of project activities.

It is notable that bacteriological testing couldn't be done in the facilities both at BPH and ONP; nevertheless, the said test equipment as well as testing procedures had been set up owing to the project support. Having said that, project staffs are in charge of testing for data collection purpose within the project period. Therefore, it is expected for the Project to start discussions with relevant parties regarding maintenance of the bacteriological laboratories including skilled human resources for bacteriological testing hereafter.

② Special consideration for gender issues, social grades, environment, ethnic groups, etc.

Negative impacts for human body and environment are concerned in the Project since researchers engage in the research activities in which infectious materials are handled. However, the researchers are obligated to follow the biosafety regulations at each institute, and experimental procedures were done in accordance with the SOPs developed by the Project. In this manner, considerations to the

safety of human body as well as environment are properly made in the Project.

4.2 Effectiveness

The effectiveness of the Project is considered to be moderate at the time of the Mid-term Review.

1) Probability of Achievement of Project Purpose

As was described at the "3.2 *Achievements of the Project*" section, the study of viral etiology has been progressing so far and individual evidences are gained as of the time of the Mid-term Review, whereas full-scale operation of bacteriological testing hasn't yet be started due to the delay in setting up of laboratory environment. Having said that, the Project has got several findings regarding bacterial etiology as reference information. Moreover, it took certain amount of time to prepare the proposals for each component, to obtain an ethical approval for it and to sign up the. Memorandum of Agreement (MOA) for the study in the Biliran province. Accumulation of the said delays was resulted in approx. one-year delay on the whole. For these reasons, project achievements including research outcomes haven't been gained as of the Mid-term Review, in comparison to the expected accomplishments envisaged at the time of the commencement of the Project.

The Project has managed to grasp an outline of etiology of infectious diseases as well as envisaged risk factors for severe childhood pneumonia from etiological study at sentinel sites and the rapid household assessment in the Biliran province. The Project is planning to commence the cohort study just after the time of the Mid-term Review. By taking the remaining project period into consideration, the Project is rearranging the Plan of Operations (PO) as follows: the Project start to design a intervention methodology in parallel with the cohort study; and to finalize the methodology by reflecting the results from the cohort study, so that the level of evidences obtained through the project research activities won't be diminished. If it goes successfully, it is anticipated that several evidences regarding intervention for the reduction of incidence of pneumonia as well as for preventing severe childhood pneumonia is gained by the end of the project period. For the sake of it, the Project should a detailed operational plan in consideration of the time required for obtaining ethical approval for it on top of the human resource and budget allocation; information sharing amongst stakeholders is of importance to gain a common understanding about the operational plan as well. Furthermore, The Project is required to start the cohort study as early as possible, as it is desired to secure follow-up period of the intervention study as long as possible (2 pneumonia endemic seasons) for precise analysis of intervention effects.

As was described at the "*Achievement of Output 1*" section, referential bacteriological analysis showed a low detection rate at all sentinel sites. As one of the reason for it, the Project concluded that about 40 percent among the child patients had received antibiotics prior to admission, which might affect the detection of bacteria by culture from the samples. Even though the Project conducted the bacteriological identification to selected samples using PCR method to increase the detection rate, there are only a few percent of them were positive for bacteria in the respiratory samples by PCR. Essentially, it is difficult to conduct bacteriological test from the technical perspectives, since the volume of blood collected from children is limited and they can't extract sputum by themselves. Meanwhile, the Project identified RS virus in approx. 30% of respiratory samples from pediatric patients with clinical diagnosis. From this finding of the Project, the significance of viral infection (esp. RS virus) is strongly suggested as one of cause of childhood pneumonia in the Philippines. Especially in the rural areas in the Philippines where confirmed

diagnosis based on the identification of causative pathogens isn't available, administration of antibiotics is the first-line treatment based on the clinical diagnosis; therefore, the said finding will contribute the optimization of the treatment for childhood pneumonia in future. Further analysis is strongly anticipated for higher evidences.

With regard to the aspect of technical transfer, various research and diagnostic technologies had been transferred to RITM, and they has reached at a certain technical level enough to maintain and enhance the technology by themselves. It is notable that, concerning to virological analysis, hMPV, type C influenza virus and EV 68 were isolated for the first time in the Philippines; implying that RITM has enhanced their capacity not only as a research institute but also national reference laboratories. Concerning to bacteriological testing, the Projeet has facilitated and supported the conduct of molecular diagnosis for detection of atypical bacteria in 2 sentinel sites. Moreover, RITM enhanced their capacity of epidemiological analysis such as the spatial analysis for childhood pneumonia as of the time of the Mid-term Review.
The novel technologies transferred to RITM are summarized in the table below.

Department	Technologies and Techniques	Achievements
Virology Laboratory of RITM	Appropriate sample transportation (application of new transport medium)	Improvement of detection rate for viruses such as RS virus
	Techniques for virus isolation and identification (Micro-plate method)	Isolation of human metapneumovirus (hMPV) (Philippines' first case of isolation)
		Isolation of type C influenza virus (Philippines' first case of isolation)
		Isolation of Enterovirus (EV) 68 (Philippines' first case of isolation)
Molecular Biology Laboratory of RITM	Gene identification method	Determination of base sequence of pathogens at RITM
	Gene analysis method	Identification of detected EV68 by gene sequencing technique
Bacteriology Laboratory of RITM	Isolation of causative pathogens for atypical pneumonia	Enhancement of isolation system of causative pathogens from clinical samples
	Detection of causative pathogens for atypical pneumonia	Detection of causative pathogens of atypical pneumonia using Real-time PCR method
Epidemiology and Biostatistics Laboratory of RITM	Spatial analysis for childhood pneumonia	Application of spatial analysis for childhood pneumonia at the rapid assessment (this analysis method will be also applied for upcoming cohort study)
	Data analysis for disease burden studies	Analysis method for disease burden study (this analysis method will be also applied for upcoming cohort study)
Bacteriology Laboratories of 4 sentinel site hospitals	Installation of bacteriological testing	Establishment of bacteriological culture system
		Installation of bacteriological testing (Bacterial staining method and Drug susceptibility test)

2) Important assumptions for the achievement of Outputs and Project Purpose

① Current status of the important assumption of "*Support from hospitals and local governments is obtained*" for the achievement of Outputs

The Project has been receiving support from the local health facilities as well as government for field surveys such as the rapid household assessment and the census; thus, it is considered that this assumption has been fulfilled as of the time of the Mid-term Review.

② Current status of the important assumption of "*Childhood pneumonia remains a major public health problem in the country*" for the achievement of Outputs.

The political contentment from the central government (DOH) on childhood pneumonia control has been maintained; thus, it is considered that this assumption has been fulfilled as of

the time of the Mid-term Review.

3) Contributing Factors for Effectiveness

No major contributing factor for effectiveness has observed as of the time of the Mid-term Review.

4) Inhibitory Factors against Effectiveness

Since the said internal and external causes of the delays negatively affected the generation of research outcomes as well as project achievements, those are recognized as hindering factors against efficiency of the Project.

4.3 Efficiency

The efficiency of the Project is at an intermediate degree as of the time of the Mid-term Review, as several internal and external factors negatively affected smooth implementation of research activities.

1) Progress Management of the Project Activities

As described as "*Verification of Implementation Process*", it took 5 months for a project coordinator to arrive at his post, affecting hiring process of external project staffs. Moreover, the delay of installation work (specifically, power distribution work and office procedures for it) as well as longer-than-expected time for discussion regarding design / contents of field survey among the Project members, obtaining ethical approval by the IRB and signing MOA for research implementation also affected the progress of the project research activities, resulting in approx. one year delay on the whole. The Project had discussions with relevant parties in each issue, and information exchange amongst players of the Project with regard to research findings and monitoring results has been continued regularly; nevertheless, the project research activities are behind schedule by approx. 1 year on the whole as a consequence as of the time of the Mid-term Review. Though the Project has been properly monitored from the perspective of progress control, not only the Project but also other relevant organizations such as JICA should have taken strong countermeasures for the said backdrops to avoid significant delay of whole progress of the Project in timely manner.

As was described at the "*Effectiveness*" section, the Project has just started to rearrange the PO of the research activities scheduled in the latter half of the project period. In accordance with the rearrangement of the activities, it is envisaged that the needs for overlapping several component of the research themes as well as relocation of human resources and budget. Therefore, it is desired for the Project to do a strict process control of the project research activities hereafter.

2) Beneficial utilization of provided equipment and materials

Setups of the research instruments have been completed in general as of the time of the Mid-term Review. Though the most of equipment provided under the Project has been used effectively for the implementation of the research activities, it took longer-than-expected time for installation works of generators at ONP as well as BPH; accordingly, full operation of bacteriological testing has been delayed substantially. Since the installation work had been completed at both BPH and ONP in May 2013; however, power distribution work hasn't be done at ONP since several consultation are required with DOH and ONP in order to keep consistency with ONP's Health Facility Enhancement Program. Currently, the Japanese side is trying to support whereas it requires a certain amount of

time for office procedures such as specification, budgeting and procurement works. Since this process is expected to complete in this November or a bit later, it is strongly desired bacteriological analysis will be accelerated hereafter.

3) Beneficial utilization of knowledge and skills acquired at the training in Japan

A total of 4 Philippine researchers have been dispatched to Japanese research institutes by the Japanese fiscal year 2012; and various knowledge and techniques with regard to epidemiological research and isolation and analysis of causative pathogens for pneumonia have been transferred to them. They applied what they learned at the *Training in Japan* to the project activities. It is notable that hMPV, Type C influenza virus and EV 68 were identified in the Philippines for the first time; it is considered that the Training in Japan had effectively turned into the reinforcement of organizational capacity.

4) Collaboration with External Resources

The virus isolation technology using the microplate method was installed by the Project; however, viral identification couldn't be done at the initial phase of the Project. Thereafter, one researcher was dispatched to Japan for training, and acquired knowledge and techniques for viral identification at the Virus Research Center of the Sendai Medical Center. The researcher is exerting the knowledge and techniques for viral identification at RITM.

A Japan Overseas Cooperation Volunteer, assigned at the *Tanauan* RHU, had supported the Project to conduct the census at the Biliran Field Office.

5) Contributing Factors for Efficiency

The RHUs under the target municipalities had supported the project field staffs to conduct the rapid assessment as well as the census by providing them household data and by accompanying them for interview researches even at remote areas. Since their support had significantly contributed precise and rapid streamlined implementation of the survey, this can be recognized as a contributing factor for efficiency of the Project.

6) Hindering Factors against Efficiency

Since the said internal and external causes of the delays negatively affected smooth implementation of the project research activities, those are recognized as hindering factors against efficiency of the Project.

4.4 Impact

The following positive impacts are confirmed and/or expected by the implementation of the Project.

1) Probability of achievement of the Overall Goal

The Project sets "*Reduction of mortality due to childhood pneumonia*" as an Overall Goal. In order to realize this in future, effective interventions shall be vilified within the time frame of the Project; subsequently, utilized by DOH for communicable disease control in the Philippines. Meanwhile, the cohort study is about to commence at the time of the Mid-term Review, and subsequent intervention study supposed to be done at the final phase of the Project. Moreover, the interventions proposed by the Project will be highly dependent on its evidence level and feasibility whether those are applied

for the control of childhood pneumonia by DOH. Therefore, it is difficult to estimate the probability of achievement of the Overall Goal at this moment.

Viewed from the opposite side, the interventions should be effective and feasible enough to reduce the mortality due to childhood pneumonia in order to achieve the Overall Goal. As has been mentioned, the project research activities are far behind schedule in approx. 1 year as of the time of the Mid-term Review; accordingly, the Project is in the course of rearranging the plan of operation of the project activities. Thus, it will be one of the key components for generating results with high evidences and feasibility.

On the other hand, as was described at the "*Effectiveness*" section, the Project has already obtained several scientific findings regarding the features of childhood pneumonia, such as the significance of viral pneumonia for it. Obtaining evidences for intervention effects with regard to the reduction of incidence of severe pneumonia is envisaged as an indicator for the achievement of the Project Purpose. It is, nevertheless, expected that many individual evidences will be obtained by analyzing a set of data from cohort survey and intervention study from many directions.

2) Other Positive Impacts

① Enhancement of Testing and Diagnostic Function at RITM

Through the research activities of the Project, various novel testing and diagnostic technologies had been transferred. Owing to this, RITM is enabled to conduct bacteriological and virological tests, diagnosis and analysis targeting various pathogens; therefore, testing and diagnostic function are enhanced at RITM as national reference laboratories.

② Bacteriological diagnostic services at the ONP and the BPH

Though both ONP and BPH didn't have a function to provide bacteriological testing services at their facilities, bacteriology laboratory are being set up by the project at each facility including a high-capacity generator for avoiding power interruption of CO_2 incubator (used for blood culture) and other equipment. The laboratories are supposed to use exclusively for research purpose under the Project by the end of the project period, and will be handed over to each hospital after the end of the Project. Given that the laboratories were maintained properly by them, and laboratory staff in the hospital acquired proper techniques for bacteriological testing, positive impact will be gained in terms of the reinforcement / upgrade of function for the testing and diagnostic services. Though the isolation rate of bacteria from blood samples of pediatric patients are very low at all 4 sentinel laboratories due to complicated factors such as prior administration of antibiotics, technical difficulty of sample collection from pediatric patients and so on, the said techniques are applied for sample (blood, sputum, feces, etc.) culture for bacterial testing for adult patients with less technical challenges.

③ Treatment of Childhood Pneumonia

Especially for rural areas in the Philippines, less health facilities have testing function for diagnosing respiratory tract infection, and the first-line choice of pharmaceutical treatment for suspected cases is the administration of certain antibiotics in accordance with the Integrated Management of Childhood Illness (IMCI). However, the Project has revealed that a portion of clinically diagnosed pneumonia cases is attributed to viral infection; various types of viruses has been detected from the samples obtained from pediatric patients with clinically diagnosed pneumonia and accounting for over 40% of tested samples (notably, detection rate of RS virus is approx. 30%). Since antibiotics are ineffective for the treatment

of viral infection, this can be one of risk factor for advancing severe illness due to the delay in proper treatment. The Project currently envisages as an intervention that the development of diagnostic system (diagnostic algorithm) to narrow down suspected causative pathogens with clinical manifestation and available testing results at early stage of illness; given that the intervention would contribute the optimization of pharmaceutical treatment in consideration of local etiology such as prevalence of causative pathogens as well as its drug susceptibility, positive impacts for the early initiation of treatment and subsequent reduction of child mortality can be expected to some extent.

④ Application of research outcome to other countries

Research outcomes, especially for that from disease burden studies at communities, will be applicable at other regions in the Philippines as well as other countries; it is expected for the Project to provide findings, which can contribute the control of acute respiratory tract infections at whole developing countries. The Project will continue to share the findings with DOH, WHO, UNICEF and other relevant parties for practical benefits toward infection control at other developing countries.

3) Other Negative Impact

No negative impact attributed to the implementation of the Project was observed as of the time of the Mid-term Review.

4.5 Sustainability

A self-sustainability as well as a self-deployment of the benefits provided by the Project can be expected to some extent as of the time of the Mid-term Review.

1) Policy and Institutional Aspects

As described in the "*Relevance*" section, political importance of countermeasures for control of childhood pneumonia in the Philippines is maintained, and it is assumed to be continued even after the end of the Project.

On the other hand, the purpose of the Project is to obtain evidences regarding intervention effective for the reduction of death from childhood pneumonia. On the basis of this achievement, the Project is expecting actual reduction of child mortality due to pneumonia as an Overall Goal. For the sake of it, it is necessary for the interventions, evidenced by the Project, to be adopted for measures of infectious disease control (esp. childhood pneumonia) practically. In order for the interventions to be adopted, as a matter of course, it is highly dependent on the level of its effectiveness and feasibility of the intervention. Therefore, it is desired for the project to start the discussions amongst relevant and responsible parties such as DOH in light of the utilization and/or application of the achievements (esp. interventions) of the Project.

2) Financial Aspects

As just described, the Project Purpose is to validate effective interventions for the reduction of child mortality due to pneumonia, and the Project is anticipating the intervention is utilized by policymaking institution such as DOH for the control of childhood pneumonia in future. Thus, the packaged intervention, which will be developed by the Project, should contain not only an operational guide but also necessary materials and equipment, cost analysis results, etc. for smooth

introduction of the interventions.

On the other hand, the bacteriological testing is dedicated for collecting data under the project research activities during its designated period; therefore, both maintenance of laboratory equipment and testing procedures are operated by the Project. However, it is anticipated that the said laboratories are expected to be utilized by the hospitals for general diagnostic services after the end of the project period, each hospital should discuss about how to maintain the function of bacteriological testing (incl. maintenance costs) with relevant parties such as the Project, the Local Government Unit (LGU) and the Center for Health Development (CHD) in advance of project termination. Likewise, RITM should discuss with relevant parties about necessary preparation (e.g. maintenance costs, procurement of reagents and consumables, etc.) for maintaining testing and diagnostic services as well as laboratory instruments, since the number and price of the research instruments and equipment, installed at RITM, are high.

3) Technical Aspects

Advanced testing technologies such as isolation and viral pathogens necessary for the project research activities have already transferred to RITM as of the time of the Mid-term Review. Notably, RITM had already yielded results that they isolated hMPV, type C influenza virus and EV 68 for the first time in the Philippines. Besides, laboratories at 4 sentinel sites had been set up for bacteriological testing, and bacteriological testing system had been established to upgrade their laboratory facilities, even though isolation rate of bacteria is still low. Therefore the Project, especially the clinical and laboratory working group (Working Group A) should discuss to show the clear direction of the etiology studies regarding bacteriology. Having said that, from the technical perspective, it is desired laboratory staff at the hospitals would achieve skills of bacteriological testing technology by the end of the project period.

As just described, RITM had acquired the technologies for isolation and identification of causative pathogens as of the time of the Mid-term Review. Besides, RITM already possesses know-how and experiences of field researches including cohort study. The Project is planning to commence a cohort study and subsequent intervention study. It is expected that both RITM and JICA experts (researchers) will further enhance capacity of field study; thus, it is desired that RITM as well as JICA experts (researchers) would put their efforts to analytical work of these studied on top of the operational management collaboratively.

4) Comprehensive Sustainability

Nevertheless it is difficult to measure exactly the sustainability of the Project, securing the comprehensive sustainability within the period of the Project would be anticipated to some extent due to the reasons mentioned above.

4.6 Conclusion

Advanced testing technologies such as isolation and identification of viral pathogens necessary for the project research activities have already been effectively transferred to RITM, and the Project has already obtained several scientific findings related to features of childhood pneumonia, such as significance of virus infection in child pneumonia. It is expected that many individual evidences will be obtained by analyzing a set of data from cohort survey and intervention study from many directions by the end of the Project.

However, because there has been about a year delay of implementation of studies of etiology, disease burden, and risk factor analysis, it is difficult to predict whether the validation of effective interventions to reduce mortality due to pneumonia in children (project purpose) could be achieved at the end of the Project.

To achieve the project purpose and expected outputs, the step-wisely designed study schedule should be adjusted to implement in parallel avoiding losing scientific validation. The Project should review the study schedule; start necessary preparation to meet to the schedule in collaboration with related organizations. The Project and JICA should manage the operation further sensitively and collaboratively not to make delay of activities. In addition, it is expected that both RITM and JICA experts (researchers) will further enhance capacity of field study; thus, it is desired that RITM as well as JICA experts (researchers) would put their efforts to analytical work of these studies on top of the operational management collaboratively. It is also important to promote dissemination of evidences to DOH and related partners, such as WHO and UNICEF.

CHAPTER 5 RECOMMENDATIONS

1. The Project, ONP and JICA Philippines Office should monitor the generator installation work at ONP not to happen further delay so that the bacteriological testing result can be referred as scientific observations.

2. Related to the fact the referential bacteriological analysis showed a low detection rate at all sentinel sites, there are still discussions on future direction of research on etiological study in bacteriology. The clinical and laboratory working group (Working Group A) should discuss and decide whether the Project will introduce other testing methods to improve the detection rate, considering various priorities in the Project and its resource limitation.

3. The findings of the Project, such as the significances of virus infection in childhood pneumonia and the incidence of pertussis-related severe pneumonia, could be used by the policy making bodies as references for further reviewing strategy to reduce child mortality due to pneumonia in the Philippines, e.g. revising treatment guidelines, and evaluating cost-effectiveness of introduction of pneumococcal conjugate vaccines. The Project should disseminate the findings and develop an intervention package (incl. operational guide, necessary materials and equipment and human resources, cost analysis, etc.) in a practical manner so that DOH and relevant organizations can easily assess the feasibility.

4. The Project should collect information on various field activities by various actors that are related to the Project in order to check the feasibility of the approaches of intervention, and have close discussion with DOH and local health authorities to decide them. JICA should facilitate information exchange between JICA experts and actors such as DOH and JICA projects in the area of the maternal, newborn and child health.

5. To secure two pneumonia epidemic seasons for follow-up period, the Project should take the following actions to start the intervention study as early as possible:
   - To develop a complete schedule including detail activities and financial/human resource inputs, such as a Gantt chart, by the end of October 2013, considering timeline to reach consensus on intervention study, to get ethical approval etc.;
   - To share the complete schedule with relevant parties to implement the planned activities collaboratively;
   - To start the cohort study as early as possible; and
   - To adjust the design of the intervention study based on new findings from the cohort analysis if necessary.

6. The Project should discuss the appropriate allocation of input within the project budget balancing further research priority activities and necessary inputs including assignment of Japanese researchers.

7. RITM should take necessary actions to develop an action plan on utilization of provided equipment to RITM and sentinel sites after the end of the Project by March 2014 in collaboration with the relevant parties (DOH, designated hospitals, LGU and CHD) and JICA experts.

8. The latest PDM (version 1) should be revised; the indicators should be modified for better process management and to evaluate achievement of the Project Purpose and expected Outputs more precisely. The Team suggests that the Project should revise the PDM when the detailed

schedule in the latter half of the Project are finalized, and submit it to JCC to get approved around April 2014. The Team offers a revision example as shown in the PDM attached hereto (Annex 6) for the sake of smooth implementation of revision work by the Project.

END

PROJECT DESIGN MATRIX (PDM)

Annex 1

Project Name: Comprehensive Etiological and Epidemiological Study on Acute Respiratory Infections in Children: Providing Evidence for the Prevention and Control of Childhood Pneumonia in the Philippines

Target Area: The Philippines
Target Group: Children under Five Years Old
Duration: April, 2011 to March, 2016 (Five years)

Date: February 14, 2011
PDM Version_1

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions
Overall Objective			
Reduction of mortality due to childhood pneumonia			
Project Purpose			
Etiology, disease burden and risk factors of childhood pneumonia are defined and effective interventions to reduce mortality due to pneumonia in children are validated	1 New evidences obtained for prevention and control of childhood pneumonia through appropriate methods (e.g. study design, sample size, study assumption, analytical methods)	1 Occasional reports, publication in peer-review journals	
Outputs			
1 Etiology of childhood pneumonia and respiratory infections in the selected sites is determined	1-1 Composition of identified bacterial and viral pathogens detected at 4 sentinel sites 1-2 Correlation of identified pathogens and severe pneumonia detected at 4 sentinel sites	1-1 Specimen transport log book, log books for quality control, progress report 1-2 Specimen transport log book, log books for quality control, progress report	1 Childhood pneumonia remains a major public health problem in the country
2 Disease burden due to childhood pneumonia is measured in the selected sites	2-1 Incidence of severe disease and deaths due to childhood pneumonia determined in at least 2 communities	2-1 Annual Report	
3 Risk factors for severe pneumonia in children are identified	3-1 Risk factors and host factors for severe pneumonia and deaths (e.g. etiology, demography) assessed and identified	3-1 Annual Report	
4 Interventions to reduce mortality due to childhood pneumonia are evaluated	4-1 List of new evidences / findings gathered from the study that results in reducing mortality from childhood pneumonia	5-2 Material developed or reproduced	
5 Study results presented for modifying /updating strategies for the control of childhood pneumonia	5-1 Improved intervention package is developed to recommend to national and local stakeholders	4-1 Annual Report	

PROJECT DESIGN MATRIX (PDM)

Activities	Indicators	
<Etiology Studies>		
1-1 To establish appropriate laboratory capacity in the selected government hospitals for etiological studies	1-1 Three selected government hospital laboratories capable of bacterial isolation, identification and antibiotic susceptibility testing of fastidious organisms, i.e. *S. pneumoniae, H. influenzae, and N. meningitides*, causing childhood pneumonia	1 Support from hospitals and local governments is obtained
1-2 To strengthen RITM capacity to detect, identify and analyze etiological agents of childhood pneumonia	1-2-1 Detection rate of bacterial pathogens including atypical bacterial pathogens using molecular techniques compared to the standard methods in bacteriology	
	1-2-2 Detection rate of virological pathogens using molecular techniques compared to the standard methods in virology	
1-3 To establish sentinel sites in the selected primary health facilities for etiological studies	1-3 Eight sentinel sites in primary health care facilities* established for specimen collection from patients of childhood pneumonia	
1-4 To collect and test samples for bacteriological and viral pathogens from children with pneumonia and other respiratory infections	1-4 The number of samples (at least 2,000 per year) collected for bacterial and virological testing	
1-5 To monitor the sample collection and testing at the sentinel sites	1-5 The number of monitoring visits conducted (6 visits to each site a year)	
<Disease Burden Studies>		
2-1 To establish a methodology to measure the incidence of pneumonia and pneumonia-associated deaths	2-1 Study protocols approved by IRBs (of RITM, Tohoku University, EVRMC, ONP, BPH, CHD 4B and CHD 8)	
2-2 To collect and analyze the data to measure the incidence of pneumonia and pneumonia-associated deaths	2-2 Data analyzed in appropriate manner	
<Risk Factors Analysis>		
3-1 To establish and maintain an integrated database	3-1 Database established and maintained	
3-2 To identify risk factors using the data from etiology and disease burden studies	3-1 Statistical analysis conducted	

PROJECT DESIGN MATRIX (PDM)

<Intervention Studies>		**Pre-conditions**
4-1 To develop methods/protocol for intervention studies to reduce mortality due to childhood pneumonia based on the results of the studies on etiology, disease burden and risk factors	4-1 Study protocols approved by IRBs (of RITM, Tohoku University, and CHD8)	1 Research approvals are obtained from RITM, Tohoku University, EVRMC, ONP, BPH, and CHDs before starting respective research studies
4-2 To work with national and local stakeholders to review current strategies on childhood pneumonia	4-2 Meetings held with national and local stakeholders regarding current strategies before intervention studies	2 Local chief executives are informed of the project
		3 Project is endorsed by chief of hospitals.
4-3 To conduct intervention studies in the selected communities	4-3 Intervention studies implemented in the selected communities	
4-4 To work with national and local stakeholders to evaluate new strategies to decrease burden of childhood pneumonia	4-4 Meetings held with national and local stakeholders regarding the findings after intervention studies	
<Dissemination of Study Results>		
5-1 To conduct meetings / workshops to disseminate the study results	5-1 A workshop organized to share and disseminate study results at each sentinel site once a year	
5-2 To disseminate the study results through international conferences and scientific journals	5-2 Study results published in peer-review journals	
5-3 To provide DOH National ARI Control Program with the findings and recommendations for policy formulation	5-3 Meetings held with DOH National ARI Control Program	

* Facilities to be confirmed 4 OPDs (RITM, BPH, ONG, EVRCM) and 4 RHUs

Abbreviation: BHP: Biliran Provincial Hospital, CHD: Center for Health Development, EVRMC: Estern Visayas Regional Medical Center, IRB: Internal Review Board, LPH: Leyte Provincial Hospital, NRL: National Reference RHU: Rural Health Unit, RITM: Research Institute for Tropical Medicine

Input

Japanese Side

1 Dispatch of experts
(1) Chief Adviser
(2) Project Coordinator
(3) Virology
(4) Public Health
(5) Bacteriology
(6) Epidemiology

2 Equipment:
Equipment, reagent and supplies necessary for research activities in the project

3 Training of counterparts in Japan:
Hands-on training on laboratory and epidemiology

Philippine Side

1 Assignment of personnel
(1) Members of researchers' group
(2) Administrative staff

2 Provision of office space

3 Utility charges

4 Cost-sharing for travel expenses for monitoring

Annex 2

Schedule for Mid-Term Review for "The Project for Comprehensive Etiological and Epidemiological Study on Acute Respiratory Infections in Children"

Date	Day	Time	Ms. Makimoto (Leader)	Mr. Abe (Cooperation Planning)	Dr. Inoue (Evaluation Analysis)	JST Prof. Kurata	JST Mr. Sato	Venue	Accommodation
September 10, 2013	TUE	AM			NRT (9:35) →MNL (13:15) [JL741]			RITM	Manila
		15:00			Meeting with Project Coordinator and JICA representative			JICA Philippine office	
September 11, 2013	WED	9:30			Meeting with Project Coordinator and experts, Study tourof laboratories			RITM	Manila
		15:00-17:00			Interview to Dr. Coco based on questionnaire, and interview to RITM researchers (MG-A, B, C)			RITM	
September 12, 2013	THU	AM			Manila (11:55)-13:10 (Tacloban) [Cebu659] Accompanied by Dr. Tamaki &Ms. Lydia Sombrero				Biliran
		PM			Move to Biliran				
		PM			Observation of Project Lab in BPH and interview to Tohoku univ. contractual staff			BPH	
September 13, 2013	FRI	AM			Interview to Tohoku univ. contractual staff in Biliran Field office			BFO	Manila
		AM			Observation of Kawayan RHU			Kawayan RHU	
		PM			Move to Tacloban				
		PM			Tacloban (18:10)-Manila (19:25) [2P986]				
September 14, 2013	SAT	AM			Drafting an Evaluation Report			Hotel	Ditto.
		19:00			Drafting an Evaluation Report			Hotel	
September 15, 2013	SUN	AM			Drafting an Evaluation Report			Hotel	Ditto.
		PM			Drafting an Evaluation Report			Hotel	
September 16, 2013	MON	AM			Drafting an Evaluation Report			RITM	Ditto.
		PM			Drafting an Evaluation Report			RITM	
September 17, 2013	TUE	AM	NRT (9:35) →MNL (13:15) [JL741]		Drafting an Evaluation Report		NRT (9:35) →MNL (13:15) [JL741]	Hotel	Ditto.
		15:00	Check-in at hotel		Interview to RITM researchers		Check-in at hotel	RITM	
		16:00	Meeting with JICA Coordinator and JICA PP representative about updated mission schedule				Meeting with JICA Coordinator and JICA PP representative about updated mission schedule	JICA Philippine office	
September 18, 2013	WED	AM	Meeting among the mission members				Meeting among the mission members	Hotel	Ditto.
		PM	Meeting among the mission members			NRT (18:10) →MNL (21:50) [JL745]	Meeting among the mission members	Hotel	

September 19, 2013		9:00–9:30	Courtesy visit to Director of RITM			RITM	Ditto.
		9:30–10:30	Observation tour of Lab in RITM			RITM	
		10:30–15:00	Interview to the JICA Experts (Presentation by each research group) Overall Progress of the project (Prof. Oshitani) [Output 1～5] WGA:Hospital Clinical Lab (Dr.Suzuki)[Output 1] WGB:Field Study (Dr.Tamaki)[Output 2] WGC:Data Management (Dr.Suzuki and Dr.Tamaki)[Output 3]			RITM	
September 20, 2013	FRI	08:30–12:00	Research Forum			RITM	Ditto.
		13:00–17:00	Discussion for Evaluation Report draft among the mission members			RITM	
September 21, 2013	SAT	AM	Discussion for Evaluation Report draft among the mission members	MNL(9:00)→NRT(14:30)[JL746]	Discussion for Evaluation Report draft among the mission members	Hotel	Ditto.
		PM	Discussion for Evaluation Report draft among the mission members		Discussion for Evaluation Report draft with JICA Experts	Hotel	
September 22, 2013	SUN	AM	Revision of Evaluation Report draft		MNL(9:00)→NRT(14:30)[JL746]	Hotel	Ditto.
		PM	Revision of Evaluation Report draft			Hotel	
September 23, 2013	MON	9:00	Discussion for Evaluation Report draft with RITM members			RITM	Ditto.
		PM	Revision of Evaluation Report draft			Hotel/RITM	
September 24, 2013	Tue	08:30–10:00	Discussion on Evaluation Report draft with RITM members			RITM	Ditto.
		10:00–12:00	JCC and Signing of MM at DOH			RITM	
		PM	Report to Embassy of Japan			EoJ	
		17:00	Report to JICA Philippine office			JICA Philippine office	
		PM	MNL(21:00)→CGK(23:55)[PR535]				
September 25, 2013	WED	AM	MNL(9:00)→NRT(14:30)[JL746]				

Annex 3-1 Verification of Implementation Process

【Verification of Implementation Process】 Mid-term Review on the Project for Comprehensive Etiological and Epidemiological Study on Acute Respiratory Infections in Children: Providing Evidence for the Prevention and Control of Childhood Pneumonia in the Philippines

Evaluation Item	Evaluation Classification		Criteria	Necessary data and Information	Data Source	Means of Verification
	Major	Small				
Probability of achievement of the Project	Project Purpose	Whether the Project Purpose of "*Etiology, disease burden and risk factors of childhood pneumonia are defined and effective interventions to reduce mortality due to pneumonia in children are validated*" is expected to achieve by the end of the project period.	① Degree of achievement of Objectively Verifiable Indicators (OVIs) ② Comprehensive analysis	① Achievements of OVIs ② Views of related players	① Project documents ② C/P JICA Experts, C/P	① Document review ② Questionnaire ③ Interview
	Outputs	From extrapolation of the progress and/or achievement at the time of the Mid-term Review, whether the Output 1 of "*Etiology of childhood pneumonia and respiratory infections in the selected sites is determined*" is achieved or expected to achieve by the end of the project period.	Prospect of achievement of OVIs	① Achievements of OVIs ② Views of related players	① Project documents ② C/P JICA Experts, C/P	① Document review ② Questionnaire ③ Interview
		From extrapolation of the progress and/or achievement at the time of the Mid-term Review, whether the Output 2 of "*Disease burden due to childhood pneumonia is measured in the selected sites*" the end of the project period.		① Achievements of OVIs ② Views of related players	① Project documents ② C/P JICA Experts, C/P	① Document review ② Questionnaire ③ Interview
		From extrapolation of the progress and/or achievement at the time of the Mid-term Review, whether the Output 3 of "*Risk factors for severe pneumonia in children are identified*" is achieved or expected to achieve by the end of the project period.		① Achievements of OVIs ③ Views of related players	① Project documents ② C/P JICA Experts, C/P	① Document review ② Questionnaire ③ Interview
		From extrapolation of the progress and/or achievement at the time of the Mid-term Review, whether the Output 4 of "*Interventions to reduce mortality due to childhood pneumonia are evaluated*" is achieved or expected to be achieved by the end of the project period.		① Achievements of OVIs ② Views of related players	① Project documents ② C/P JICA Experts, C/P	① Document review ② Questionnaire ③ Interview
		From extrapolation of the progress and/or achievement at the time of the Mid-term Review, whether the Output 5 of "*Study results are presented for modifying/updating strategies for the control of childhood pneumonia*" is achieved or expected to be achieved by the end of the project period.		① Achievements of OVIs ② Views of related players	① Project documents ② C/P JICA Experts, C/P	① Document review ② Questionnaire ③ Interview
Inputs	Inputs from Japan Side	Whether JICA Experts were dispatched as scheduled.	Comparison of plan with actual result	Results of Input	① Input records ② Project reports	Document review
		Whether equipment for project activities was provided as planned.		Results of Input (incl. Information for status of utilization)	① Input records ② Project reports	① Document review ② Direct observation
		Whether C/Ps' training in Japan and/or third countries were implemented as planned.		Results of acceptance of trainees	① Input records ② Project reports	Document review
		Whether local cost from JICA side were implemented as scheduled.		Budget and implementation result	① Input records ② Project reports	Document review
	Inputs from Philippine Side	Whether C/Ps were appropriately allocated enough to implement project activities.		① Results of Input ② Views of related players	① Input records ② C/P Experts, C/P	① Document review ② Interview
		Whether office space for JICA experts was provided.		Results of Input	① Input records ② C/P Experts, C/P	① Document review ② Interview
		Whether local cost from Philippine side were implemented appropriately.		① Results of Input ② Views of related players	① Input records ② C/P Experts, C/P	① Document review ② Interview

Annex 3-1 Verification of Implementation Process

【Verification of Implementation Process】 Mid-term Review on the Project for Comprehensive Etiological and Epidemiological Study on Acute Respiratory Infections in Children: Providing Evidence for the Prevention and Control of Childhood Pneumonia in the Philippines

Evaluation Item	Evaluation Classification		Criteria	Necessary data and Information	Data Source	Means of Verification
	Major	Small				
Implementation Process	Planned activities	Whether the project activities were implemented as scheduled.	Comparison of plan with actual result	Performance of project activities	Project reports	① Document review ② Questionnaire
		Whether the PDM was updated in accordance with surroundings of the Project under the agreement amongst relevant parties.		Updates of PDMs and its reasons for modification	Meeting minutes of the Joint Coordinating Committee (JCC	① Document review ② Questionnaire ③ Interview
	Technical transfer	Whether methods and/or approaches of technical transfer were appropriate.		Methods and contents of technical transfer	① Project reports ② C/P Experts, C/P	① Document review ② Interview
	Managemen t system	Who, how and how often the progress of the Project was monitored, and consequent findings were reflected to the operation of the Project.		① Progress monitoring system ② Feedback system	① Project reports ② Experts	① Document review ② Questionnaire
		How the decision-making process for modification of the project activities, assignment of personnel, etc. was.		Process for decision-making	① Project reports ② Experts	① Document review ② Questionnaire
		How the communication and cooperative relationship amongst players in the Project was.		JCC and other meeting	① Project reports ② Views of related players	① Document review ② Questionnaire
		Whether Project information was effectively shared.		JCC and/or other meetings	① Project reports ② Views of related players	① Document review ② Questionnaire
	Ownership and Autonomy	How ownership and autonomy of implementing bodies including C/Ps and beneficiaries were.		Contribution, attitude, etc. for the project activities.	① Project reports ② Views of related players	① Document review ② Questionnaire ③ Interview
	Problems on implementat ion process	Whether there were obstacles or problems for the implementation of the project activities.		Contributing and inhibitory factors	① Project reports ② Views of related players	① Document review ② Questionnaire ③ Interview

Annex 3-2 Five Evaluation Criteria

【Five Evaluation Criteria】 Mid-term Review on the Project for Comprehensive Etiologicel and Epidemiological Study on Acute Respiratory Infections in Children: Providing Evidence for the Prevention and Control of Childhood Pneumonia in the Philippines

Five Criteria	Evaluation Classification			Criteria	Necessary data and Information	Data Source	Means of Verification
	Major	Middle	Small				
Relevance	Priority	Consistency of the Project Purpose with Philippine policies with regard to health policies and/or science and technology policies.		Comparison with Philippine policies	Related policies in Philippines	① Document for related policies ② DOH ③ JICA、C/P Experts, C/P	① Document review ② Interview ③ Questionnaire
		Consistency with Japan's ODA policies and JICA's aid policies	Relativity with prioritized area in Japan's ODA policies	Comparison with Philippine health related policies	Prioritized area in Japan's ODA policies for Philippines	① Japan's ODA policies for Philippines ② 2011-2015Japan's Global Health Policy 2011-2015	Document review
			Relativity with prioritized area in JICA's aid policies	Comparison with Philippine health related policies	Place of health assistance in the JICA's aid policies	JICA's aid policy for Philippines	Document review
	Necessity	Relevance of target group	Consistency of needs of target group with the Project Purpose		① Experiences /performances of C/Ps ② Status of target diseases in Philippines	① Project documents ② C/P JICA Experts, C/P ③ Health statistics	① Document review ② Interview
	Appropriateness of implementation method	Appropriateness of research design and/or approaches in the framework of SATREPS			Background and/or process for research design and/or approaches	① ex-ante evaluation report ② C/P JICA Experts, C/P	① Document review ② Questionnaire ③ Interview
		Special consideration	Special assiduities for gender issues, social grades, environment, ethnic groups, etc.		Views of related players	① JICA Experts ② C/P	① Document review ② Questionnaire ③ Interview
		Technical superiority of Japanese research institutes			Skills and experiences of Japanese research institutes	① Project documents ② JICA Experts ③ C/P	① Document review ② Interview
Effectiveness	Achievements	Status of the achievements of Outputs	Performance of project activities		Performance of project activities and its accomplishments	① Project documents ② C/P JICA Experts, C/P	① Document review ② Questionnaire ③ Interview
			Status of the achievements of OVIs for Outputs		① Status of achievements of OVIs ② Project activities and its accomplishments	① Project documents ② C/P JICA Experts, C/P	① Document review ② Questionnaire ③ Interview
			(Output 1) Whether etiology of pneumonia (i.e. causative microorganisms and/or viruses) is or expected to be elucidated.		Outputs other than the scope of the project activities	① Project reports ② C/P JICA Experts, C/P	① Document review ② Interview ③ Questionnaire ④ Direct observation
			(Output 2) Whether disease burden of pneumonia in the target communities is or expected to be elucidated.		Outputs other than the scope of the project activities	① Project reports ② C/P JICA Experts, C/P	① Document review ⑤ Interview ⑥ Questionnaire ⑦ Direct observation

[Five Evaluation Criteria] Mid-term Review on the Project for Comprehensive Etiological and Epidemiological Study on Acute Respiratory Infections in Children: Providing Evidence for the Prevention and Control of Childhood Pneumonia in the Philippines

Five Criteria	Evaluation Classification			Criteria	Necessary data and Information	Data Source	Means of Verification
	Major	Middle	Small				
			(Output 3) Whether risk factors of severe pneumonia in children are or expected to be identified.		Outputs other than the scope of the project activities	① Project reports ② C/P JICA Experts, C/P	① Document review ② Interview ③ Questionnaire ④ Direct observation
			(Output 4) Whether interventions (evidences) that reduce the mortality from childhood pneumonia are or expected to be identified.		Outputs other than the scope of the project activities	① Project reports ② C/P JICA Experts, C/P	① Document review ② Interview ③ Questionnaire ④ Direct observation
			(Output 5) Whether the improved intervention package for modifying/updating strategies for the control if childhood pneumonia is or expected to be identified.		Outputs other than the scope of the project activities	① Project reports ② C/P JICA Experts, C/P	① Document review ② Interview ③ Questionnaire ④ Direct observation
		Probability of the achievement of the Project Purpose	Status of the achievements of OVIs for Project Purpose		① Status of achievements of OVIs ② Project activities and its accomplishments	① Project documents ② C/P JICA Experts, C/P	① Document review ② Questionnaire ③ Interview
			Whether scientific evidences for the reduction of childhood pneumonia in the Philippines are advanced by the end of the project period.	Overall judgment	① Status of achievements of OVIs ② Outputs other than the scope of the project activities	① Project reports ② C/P JICA Experts, C/P	① Document review ② Interview ③ Questionnaire ④ Direct observation
			(As a envisaged purpose of the Project) Whether research capacity of Philippine research institutes is expected to be improved at counterpart research institutes to a satisfactory level by the end of the project period.	Overall judgment	① Status of achievements of OVIs ② Outputs other than the scope of the project activities	① Project reports ② C/P JICA Experts, C/P	① Document review ② Interview ③ Questionnaire ④ Direct observation
	Cause-and-effect relationship	Whether the Project Purpose was attained as a result of the achievements of Outputs	Whether there was no logical error from the aspect of cause-and-effect relationship.	Verification of logical relationship	Verification by Evaluation Team	① Project documents ② C/P JICA Experts, C/P	① Document review ② Interview
			Whether there was any other effective approaches for the achievement of the Project Purpose	Verification of implementation approaches	① Verification by Evaluation Team ② Views of related parties	① Project documents ② C/P JICA Experts, C/P	② Document review ③ Questionnaire ④ Interview
	Contributing and inhibitory factors	Appropriateness of the important assumptions	Whether important assumptions are appropriate from aspects of current situation.	Confirmation current situation	Verification by Evaluation Team	① Project documents ② C/P JICA Experts, C/P	① Document review ② Interview

Annex 3-2 Five Evaluation Criteria

【Five Evaluation Criteria】 Mid-term Review on the Project for Comprahensive Etiological and Epidemiological Study on Acute Respiratory Infections in Children: Providing Evidence for the Prevention and Control of Childhood Pneumonia in the Philippines

Five Criteria	Evaluation Classification			Criteria	Necessary data and Information	Data Source	Means of Verification
	Major	Middle	Small				
			Whether important assumptions are appropriate from aspects of current situation and logical relationship	Verification of logical relationship	Verification by Evaluation Team	① Project document ② C/P JICA Experts, C/P	① Document review ② Interview
		Whether important assumptions are fulfilled.	Confirmation of the current status of "*Government of Philippines provides necessary budgetary support to maintain the relevant institutes*" for the achievement of Project Purpose.		Status of budget allocation by Philippine side	① Project documents ② C/P JICA Experts, C/P	① Document review ② Questionnaire ③ Interview
			Confirmation of the current status of "*Support from hospitals and local governments is obtained*" for the achievement of Outputs.		Status of supports from hospitals and local governments	① Project documents ② C/P JICA Experts, C/P	① Document review ② Questionnaire ③ Interview
			Confirmation of the other envisaged important assumption of "*Trained counterparts do not leave their position so as to affect the outputs of the Project*" for the achievement of Outputs.		① Turnover rate of Philippine researchers ② Status of human resource allocation by Philippine side	① Project documents ② C/P JICA Experts, C/P	① Document review ② Questionnaire ③ Interview
			Other unexpected factors		Other expected and/or unexpected external factors	① C/P JICA Experts, C/P ② Project documents	① Document review ② Questionnaire ③ Interview
Efficiency	Time resource	Whether Outputs were attained as scheduled.			Progress control of the project activities	① Project documents ② Views of related players	① Document review ② Questionnaire ③ Interview
	Quality, quantity and timing of inputs	Whether quality, quantity and timing of inputs were appropriate.	Whether the number and period, areas of expertise and timing of dispatch of JICA expert were appropriate.	Comparison of results and plan	① Record of dispatch of experts ② Attitude and performance of experts	① Input records ② Project documents ③ C/P JICA Experts, C/P	① Document review ② Questionnaire ③ Interview
			Whether types, quantity and timing of installation were appropriate.		① Record of equipment provision ② Utilization status of equipment	① Input records ② C/P JICA Experts, C/P	① Document review ② Questionnaire ③ Direct observation ④ Interview
			Whether timing, contents and duration of training in Japan were appropriate, and how the training contributed for the achievement of Outputs.		① Acceptance of trainees ② Other necessary information	① Input records ② Trainees ③ JICA Experts	① —Document review ② Questionnaire ③ Interview
			Whether timing, contents, duration follow-up of on-site trainings were appropriate.		① Records of on-site trainings ② Accomplishments of trainings	① Project documents ② C/P JICA Experts, C/P	① Document review ② Questionnaire ③ —Interview

【Five Evaluation Criteria】 Mid-term Review on the Project for Comprehensive Etiological and Epidemiological Study on Acute Respiratory Infections in Children: Providing Evidence for the Prevention and Control of Childhood Pneumonia in the Philippines

Five Criteria	Evaluation Classification			Criteria	Necessary data and Information	Data Source	Means of Verification
	Major	Middle	Small				
			Whether the budget for local costs was appropriately implemented.		Local costs from Japan side	① Input records ② JICA Experts	① Document review ② Interview
			Whether allocation of Philippine C/Ps and budget for the Project were appropriate.		Allocation of local costs and researchers from Philippine side	① Input records ② C/P JICA Experts, C/P	① Document review ② Questionnaire ③ Interview
		Collaboration with other resources	Whether there was any collaboration with other resources contributed for the achievement of Outputs.		Benefits derived from collaborative activities with other development partners.	① Project documents ② JICA Experts	① Document review ② Questionnaire
	Contributing and inhibitory factors	Whether the pre-conditions were fulfilled by the scheduled commencement of the Project.	Whether Research approvals were obtained from RITM. Tohoku University, EVRMC, ONP, BPH, and CHDs before starting respective research studies.		Timing of approval of research for each activities by the committees	① C/P JICA Experts, C/P ② Project documents	① Document review ② Questionnaire ③ Interview
			Whether local chief executives were informed of the project.		Record(s) of discussion w/ local chief executives	① C/P JICA Experts, C/P ② Project documents	① Document review ② Questionnaire ③ Interview
			Whether the Project is endorsed by chief of hospitals.		Record(s) of endorsement for the Project from hospital heads	① C/P JICA Experts, C/P ② Project documents	① Document review ② Questionnaire ③ Interview
			Other unexpected factors		Other expected and/or unexpected external factors	① C/P JICA Experts, C/P ② Project documents	① Document review ② Questionnaire ③ Interview
		Whether there were any contributing factors to efficiency.			Other necessary information	① Project documents ② C/P JICA Experts, C/P	① Document review ② Questionnaire ③ Interview
		Whether there were any inhibitory factors to efficiency.			Other necessary information	① Project documents ② C/P JICA Experts, C/P	① Document review ② Questionnaire ③ Interview
Impact	Probability of achievement of Overall Goal	Whether mortality due to childhood pneumonia are reduced after 3 to 5 years time from the end of the project period.		Exploration based on the current status	① Prospect of achievement of the Project Purpose ② Verification of Sustainability	① Project documents ② Views of related players	① Document review ② Questionnaire ③ Interview
		Whether the evidence-based intervention presented by the Project are endorsed by the authorities concerned for the reduction of mortality due to childhood pneumonia.		Exploration based on the current status	① Prospect of achievement of the Project Purpose ② Verification of Sustainability	① Project documents ② Views of related players	① Document review ② Questionnaire ③ Interview
	Other impacts	Whether there are any positive and/or negative impacts confirmed and/or expected to be generated other than envisaged Overall	Positive impacts		Other necessary information	① Project reports ② C/P JICA Experts, C/P ③ Views of related players	① Document review ② Questionnaire ③ Interview

【Five Evaluation Criteria】 Mid-term Review on the Project for Comprehensive Etiological and Epidemiological Study on Acute Respiratory Infections in Children: Providing Evidence for the Prevention and Control of Childhood Pneumonia in the Philippines

Five Criteria	Evaluation Classification			Criteria	Necessary data and Information	Data Source	Means of Verification
	Major	Middle	Small				
		Goal	Negative impacts		Other necessary information	① Project reports ② C/P JICA Experts, C/P ③ Views of related players	① Document review ② Questionnaire ③ Interview
Sustainability	Probability of maintaining the benefits derived from the Project	Political and institutional aspects	Whether the policies related to infection control and science and technology would be maintained and/or enhanced.		Philippine related policies	① DOH ② C/P JICA Experts, C/P ③ Views of related players	① Document review ② Questionnaire ③ Interview
		Financial aspect	Whether the budget for maintaining and enhancing the benefits derived from the Project will be secured.		Philippine related policies	① DOH ② C/P JICA Experts, C/P ③ Views of related players	① Document review ② Questionnaire ③ Interview
			Whether the budget and personnel for the enhancement of the benefit will be allocated.		Philippine related policies	① DOH ② C/P JICA Experts, C/P ③ Views of related players	① Document review ② Questionnaire ③ Interview
		Technical aspect	Whether the research techniques provided by the Project will be maintained and enhanced autonomously.		① Presence of maintenance mechanism for of technical benefits ② Opportunities to update technical skills	① Project reports ② 、C/P JICA Experts, C/P ③ Views of related players	① —Document review ② Questionnaire ③ Interview
		Contributing and inhibitory factors	Practical procedures for the implementation of official pre-clinical trials are discussed amongst the Project.		Results of discussions	① Project reports ② JICA Experts	① Questionnaires ② Interview
			Whether discussions regarding initiatives for realizing the Overall Goal(s) are stated amongst the Project, C/Ps and relevant stakeholders.		Results of discussions	① Project reports ② JICA Experts	① Questionnaire ② Interview
	Comprehensive sustainability	Whether the comprehensive sustainability is secured or not, in the view of above-mentioned aspects.			N/A	① Project documents ② C/P JICA Experts, C/P ③ Views of related players	Analytical evaluation by the Evaluation Team

Annex 4

Persons Interviewed

＜Philippines Side＞

Department of Health (DOH)

- Ms. Maylene Beltran, Director IV BIHC-DOH
- Dr. Maria Soledad Antonio, OIC Division Chief, BIHC-DOH
- Dr. Irma Asuncion, Director IV, NCDPC
- Dr. Mario Baquilod, OIC Director III, IDO, NCDPC
- Dr. Honorata L. Catibog, Director III, NCDPC
- Dr. Juanita Basilio, Medical Officer V, NCDPC
- Dr. Jaime Bernadas, Director IV, CHD 8
- Dr. Jose Llacuna, Jr., Director IV, CHD IV B
- Mr. Shinichi Takenaka, JICA Health Sector Advisor, BIHC
- Mr. Jimmy A. Recilla, Project Development Officer, BIHC

Research Institute for Tropical Medicine (RITM)

- Dr. Socorro P. Lupisan, Director III, RITM
- Dr. Veronica Tallo, Head of Department of Epidemiology and Biostatistics, RITM
- Dr. Amado Tandoc III, Head of Department of Virology, RITM
- Ms. Lydia T. Sombrero, Supervising Science Research Specialist, RITM
- Ms. Vina Lea Arguelles – Science Research Specialist II, RITM

Asian Foundation for Tropical Medicine Inc. (AFTM)

- Ms. Marilu O. Venturina, Executive Director / Chief Operating Officer, AFTM, Inc.

＜Japanese side＞

JICA Experts

- Prof. Hitoshi Oshitani, Chief Advisor, JICA
- Dr. Akira Suzuki, JICA Short Term Expert
- Dr. Raita Tamaki, JICA Short Term Expert
- Mr. Ryosuke Kojima, Project Coordinator

JICA Philippines office

- Mr. Takahiro Sasaki, Chief Representative, JICA
- Ms. Sachiko Takeda, Senior Representative, JICA
- Ms. Yukari Saito, Section Chief, JICA
- Ms. Atsuko Itsuki, Representative , JICA
- Ms. Mary Ann Bakisan, Program Officer, JICA

Embassy of Japan (EOJ)

- Dr. Junichi Nitta, Second Secretary Health Attache

Annex 5-1

Researchers and Administrative Personnel of the Philippine side

Group	Position	Original as of R/D	Actual as of September 2013
Administration	Project Director	Dr.Remigio M.Olveda, Director, RITM	Dr.Socorro Lupisan, Director, RITM (March,2013-)
	Project Manager	Dr.Socorro Lupisan, Assistant Director, RITM	Dr.Veronica Tallo(April,2013-)
	Project Co-managers	Ms.Hazel Galang, Head, Department of Virology, RITM	Dr.Amado Tandoc III (July,2011-)
	Project Co-managers	Ms.Lydia Sombrero, Senior Scientist, Department of Microbiology, RITM	Ms.Lydia Sombrero, Supervising Research Specialist , Department of Microbiology, RITM
	Project Coordinator	JICA	Mr. Ryosuke Kojima (June,2013-)
Researchers			
Working Group A			
Hospital Group	Leader	Dr.Socorro Lupisan, Assistant Director, RITM	Dr.Socorro Lupisan, Director, RITM (March,2013-)
	Clinical	Dr.Socorro Lupisan, Assistant Director, RITM	Dr.Socorro Lupisan, Director, RITM (March,2013-)
	Bacteriology	Ms.Lydia Sombrero, Senior Scientist, Department of Microbiology, RITM	Ms.Lydia Sombrero, Supervising Research Specialist , Department of Microbiology, RITM
		Ms.Melisa Mondoy, RITM	Ms.Melisa Mondoy, Senior Research Specialist II, RITM
		Ms.Kristine Jeanne A.Yap, RITM	
		Ms.Daryl Almonia, RITM	Ms.Daryl Almonia, Bacteriology II, RITM
	Virology	Ms.Hazel Galang, Head, Department of Virology, RITM	Dr.Amado Tandoc III, Chief of Virology (July,2011-)
		Ms.Edelwisa S.Mercado, RITM	Ms.Edelwisa S.Mercado,Head of Molecular Biology Laboratory, RITM
		Mr.Jun Ryan Orbina, RITM	Mr. Jun Ryan Orbina, Laboratory Manager, Molecular Biology Laboratory,RITM
Working Group B			
Field Study Group	Leader	Dr.Veronica Tallo	Dr.Veronica Tallo, Chief of DEBS
	Disease Burden	Dr.Veronica Tallo	Dr. Veronica Tallo -Chief of DEBS, Ms. Portia Alday- Supervising Research Specialist, Ms. Marianette Inobaya & Mr. Alvin Tan - Senior Research Specialist
	Interventions	Dr.Veronica Tallo	Dr. Veronica Tallo -Chief of DEBS, Ms. Portia Alday- Supervising Research Specialist, Ms. Marianette Inobaya & Mr. Alvin Tan - Senior Research Specialist
Working Group C			
Working Group D			
Sentinel Site Group	Leader	RITM	(RITM Hospital)
	Clinical	Dr.Mari Rose de los Reyes, RITM	Dr. Mari Rose delos Reyes- Medical Specialist III & Head Medical Department, RITM
		Medical Officers(2)	Dr. Lea Asi - Head Employee Services & Medical Officer III
	Laboratory	Dr.Rosario Z. Capeding, RITM	(EVRMC)
		CHD	Dr. Rhodora Angulo- Chairman Department Pediatrics
		EVRMC, ONP, BPH	Dr. Rapunzel Aniceto - Project Physician
		Head of Pediatrics	(BPH)
		Head of the Laboratory	Dr. Edgar Veloso -Chief of the Hospital
		Head of OPD	Dr. Gay Anne Rico - Project Physician
		Chief of Nursing Service	(ONP)
		Head of Radiology Department	Dr. Melecio Dy - OIC
			Dr. Reynaldo Frederick Quicho - Project Physician

Annex 5-2

Dispatch of Japanese Experts

As of March 31, 2013

JFY2011					
No	Name	Organization	Position	Field	Duration
1	Hitoshi OSHITANI	Tohoku University	Professor	Chief Advisor	2011/05/17-2011/05/22*
2	Akira SUZUKI	Tohoku University	Assistant Professor	Virology	2011/05/18-2011/05/21*
3	Raita TAMAKI	Tohoku University	Assistant Professor	Public Health	2011/04/01-2011/05/02*
4	Raita TAMAKI	Tohoku University	Assistant Professor	Public Health	2011/05/17-2011/05/22*
5	Raita TAMAKI	Tohoku University	Assistant Professor	Public Health	2011/06/01-2011/06/05*
6	Raita TAMAKI	Tohoku University	Assistant Professor	Public Health	2011/06/21-2011/07/11*
7	Raita TAMAKI	Tohoku University	Assistant Professor	Public Health	2011/07/31-2011/08/06
8	Nobuko SATO	Tohoku University	Technical Assistant	Bacteriology	2011/08/01-2011/08/06
9	Hitoshi OSHITANI	Tohoku University	Professor	Chief Advisor	2011/12/04-2011/12/14
10	Hitoshi OSHITANI	Tohoku University	Professor	Chief Advisor	2012/02/28-2012/03/13
11	Akira SUZUKI	Tohoku University	Assistant Professor	Virology	2011/11/20-2011/11/26
12	Akira SUZUKI	Tohoku University	Assistant Professor	Virology	2011/12/04-2011/12/17
13	Raita TAMAKI	Tohoku University	Assistant Professor	Public Health	2011/10/03-2012/01/22
14	Raita TAMAKI	Tohoku University	Assistant Professor	Public Health	2012/02/09-2012/03/19
15	Takashi UCHINO	JICA	Contract base	Project Coordinator	2011/09/26-2013/02/07

JFY2012					
No	Name	Organization	Position	Field	Duration
1	Hitoshi OSHITANI	Tohoku University	Professor	Chief Advisor	2012/05/02-2012/05/10
2	Hitoshi OSHITANI	Tohoku University	Professor	Chief Advisor	2012/07/18-2012/07/18
3	Hitoshi OSHITANI	Tohoku University	Professor	Chief Advisor	2012/09/17-2012/09/20
4	Hitoshi OSHITANI	Tohoku University	Professor	Chief Advisor	2013/01/15-2013/01/18
5	Hitoshi OSHITANI	Tohoku University	Professor	Chief Advisor	2013/02/13-2013/2/18
6	Hitoshi OSHITANI	Tohoku University	Professor	Chief Advisor	2013/02/20-2013/2/22
7	Akira SUZUKI	Tohoku University	Assistant Professor	Virology	2012/07/18-2012/07/25
8	Akira SUZUKI	Tohoku University	Assistant Professor	Virology	2012/08/19-2012/08/21
9	Akira SUZUKI	Tohoku University	Assistant Professor	Virology	2012/08/24-2012/08/25
10	Akira SUZUKI	Tohoku University	Assistant Professor	Virology	2012/10/28-2012/11/03
11	Akira SUZUKI	Tohoku University	Assistant Professor	Virology	2012/12/02-2012/12/08
12	Akira SUZUKI	Tohoku University	Assistant Professor	Virology	2013/02/11-2013/02/16
13	Raita TAMAKI	Tohoku University	Assistant Professor	Public Health	2012/04/10-2012/08/22
14	Raita TAMAKI	Tohoku University	Assistant Professor	Public Health	2012/09/06-2012/12/23
15	Raita TAMAKI	Tohoku University	Assistant Professor	Public Health	2013/01/08-2013/02/06
16	Raita TAMAKI	Tohoku University	Assistant Professor	Public Health	2013/02/08-2013/02/22
17	Raita TAMAKI	Tohoku University	Assistant Professor	Public Health	2013/02/28-2013/03/18
18	Nobuko SATO	Tohoku University	Technical Assistant	Bacteriology	2012/04/22-2012/04/29
19	Nobuko SATO	Tohoku University	Technical Assistant	Bacteriology	2013/01/07-2013/01/12
20	Shinsuke MURAI	Tohoku University	Assistant Professor	Public Health	2012/06/25-2012/07/05
21	Mitsuhiko IWASHITA	JICA	Contract base	Project Coordinator	2013/02/12-2013/06/11

*Expenses for these six times dispatch of Japanese experts were shouldered by JST (April 2011-June 2011).

Annex 5-3

Counterpart training in Japan

As of March 31, 2013

JFY 2011					
No	**Name**	**Organization/Position**	**Training Agency**	**Training Subject**	**Training Period**
1	Ms. Vina Lea Fontelera Arguelles	RITM, Medical Technologist II	Tohoku University and Sendai Medical Center	Isolation of respiratory viruses	2011/10/17-2011/12/15
2	Ms. Daryl Joy Villaruz Alomonia	RITM, Bacteriologist II	Tohoku University	Diagnosis of atypical pneumonia	2011/10/17-2011/12/15

JFY 2012					
No	**Name**	**Organization/Position**	**Training Agency**	**Training Subject**	**Training Period**
1	Ms. Maria Nette Inobaya	RITM, Senior Science Research Specialist	Tohoku University	Epidemiological analysis with field data	2012/08/22-2012/09/23
2	Mr. Alvin Gue Tan	RITM, Senior Science Research Specialist	Tohoku University	Data analysis on disease burden study	2013/02/03-2013/03/06

Provision of Equipment (As of 15 August, 2013)

Location	Name of Equipment	Manufacturer	Model	Quantity
BPH	LapTop PC	HP	HP Pavilion DV6-6157TX	1
BPH	Printer/Scanner/Copier	canon	imageCLASSF4570dn	1
BPH	DeskTop Computer	Dell	XPS 8300	1
BPH	Bio Safety Cabinet	ESCO	SC2-4A3	1
BPH	Autoclave	Daihan Labtech	LAC-S041P	2
BPH	Centrifuge (with swing rotor)	Eppendorf	5702	1
BPH	Height Scale	SECA	SECA 416	1
BPH	Weghing Scale	SECA	SECA 354	1
BPH	Cool Box	Coleman	6277/6278	3
BPH	Refrigerator	SANYO	SR-D49T (322lt)	2
BPH	Generator (Diesel)	Yangzhou	YZ485ZD 20KW/25KVA	1
BPH	Freezer (medical)	SANYO	MDF-U537D with AVR (Stavol 2KVA)	1
BPH	Upright Microscope	Olympus	CX-41RF	1
BPH	Incubator	Panasonic	MIR-154-PK Cooled Incubator w. AVR(Stavol) 2KVA	1
BPH	Pulse Oxymeter	NONIN	Handy Pulse Oxymeter Model: 2500 A PalmSAT with Finger Clip Sensor (pediatric) Charger set for PalmSAT (charger stand) 2500 C-UNIV	1
BPH	Pulse Oxymeter	NONIN	Handy Pulse Oxymeter Model: 2500 A PalmSAT with Finger Clip Sensor (pediatric) Charger set for PalmSAT (charger stand) 2500 C-UNIV	1
BPH	Blood Pressure Apparatus pediatric	OMRON	Blood Pressure monitor HEM907, Battery Pack HEM907、230H HEM-907 Adaptor	1
BPH	Digital Thermometer	OMRON	OMRON MC-670	6
BPH	StateScopes	3M	Littman Stetoscope 'Classic II. Pediatric Stethoscope' 2113R x7 、 2138 Royal Blue x 1, Orage x 1	9
BPH	Otoscope	Welch Allyn	Diagnostic Otoscope with Insufflator Bulb Model # 20000 x 4 sets 、 Power Handle # 71000-C x4、Hardcase x 4	1
BPH	Hot Stirrer	AS ONE	SN:L09080031	1
BPH	Electric Balance	Denver Instrument	Top Loading Weghing Balance MXX-612	1
BPH	pHmeter		SN：UB10098038	1
BPH	Loop Incinerator	J.P. Selecta	Sterilbio Loop Incinerator (3000788)	1
BPH	Colorimeter	APEL	APEL DIGITAL COLORMETER AP-101	1
BPH	Digital Camera	NIKON	DIGITAL Camera COOLPIX AW100	1
BPH	Reference Books	4 books	"Red Book""Nursing Health Assessment""Manual of Clinical Microbiology" "Konemans Atlas and Textbook of Diagnostic Microbiology"	4
BPH	Walkie-Talkie	Motorola	with charge unit	2
BPH	UPS	APC	ES500	1

Location	Name of Equipment	Manufacturer	Model	Quantity
BPH	Steel cabinet Horizontal (2 drawer)	CLC Marketing		1
BPH	Vortex mixer	Vortex	Heidolph Reax Control	1
BPH	Electric Stove	La Germania		1
BPH	Digital Thermometer for equipment	SATO	PC-3300	5
BPH	Data Logger	AS ONE	EC800A	2
BPH	Micropipette 20ul	Gilson	Pipeteman 20ul	1
BPH	Micropipette 100ul	Gilson	Pipeteman 100ul	1
BPH	Micropipette 200ul	Gilson	Pipeteman 200ul	1
BPH	Micropipette 1000ul	Gilson	Pipeteman 1000ul	1
BPH	Vernier Micrometer Calipers	AS ONE	M-type, VC-15	2
BPH	Digital Camera	Nikon	Coolpix AW100	1
BPH	Airconditioner	Carrier	Window Type	1
PHO Biliran	Refrigerator	SANYO	SR-D49T (322lt)	1
EVRMC	LapTop PC	HP	HP Pavilion DV6-6157TX	3
EVRMC	Printer/Scanner/Copier	canon	ICMF4570DN	1
EVRMC	DeskTop Computer	Dell	XPS 8300	1
EVRMC	Height Scale	SECA	SECA 416	1
EVRMC	Weghing Scale	SECA	SECA 354	1
EVRMC	Cool Box	Coleman	6278-7036 2801	3
EVRMC	Blood Pressure Apparatus pediatric	OMRON	Blood Pressure monitor HEM907, Battery Pack HEM907、230H HEM-907 Adaptor	1
EVRMC	StateScopes	3M	Littman Stetoscope 'Classic II. Pediatric Stethoscope' 2138 Royal Blue x 1	1
EVRMC	Otoscope	Welch Allyn	Diagnostic Otoscope with Insufflator Bulb Model # 20000 x 4 sets 、 Power Handle # 71000-C x4、Hardcase x 4	1
EVRMC	Biometric Time & Attendance System	David Link	DL-F88	1
EVRMC	Data Logger	AS ONE	EC800A	2
ONP	LapTop PC	HP	HP Pavilion DV6-6157TX	1
ONP	Printer/Scanner/Copier	canon	ICMF4570DN	1
ONP	DeskTop Computer	Dell	XPS 8300	1
ONP	Autoclave	Daihan Labtech	LAC-5041P	2
ONP	Centrifuge (with swing rotor)	Eppendorf	5702	1
ONP	Cool Box	Coleman	6278-7036 2801	2
ONP	Refrigerator	SANYO	SR-D49T (322lt)	4
ONP	Generator (Diesel)	Lovol	1004TG 60KW/75KVA	1
ONP	Freezer (medical)	SANYO	MDF-U537D with AVR (Stavol 2KVA)	1
ONP	Upright Microscope	Olympus	CX-41-72CO2	1

Location	Name of Equipment	Manufacturer	Model	Quantity
ONP	Pulse Oxymeter	NONIN	Handy Pulse Oxymeter Model: 2500 A PalmSAT with Finger Clip Sensor (pediatric) Charger set for PalmSAT (charger stand) 2500 C-UNIV	2
ONP	Blood Pressure Apparatus pediatric	OMRON	Blood Pressure monitor HEM907, Battery Pack HEM907、230H HEM-907 Adaptor	1
ONP	Digital Thermometer	OMRON	OMRON MC-670	S
ONP	StateScopes	3M	Littman Stetoscope 'Classic II. Pediatric Stethoscope' 2138 Royal Blue x1、Orage x 2	3
ONP	Otoscope	Welch Allyn	Diagnostic Otoscope with Insufflator Bulb Model # 20000 x 4 sets 、 Power Handle # 71000-C x4、Hardcase x 4	1
ONP	Hot Stirrer	AS ONE	SN:L09080073	1
ONP	Electric Balance	Denver Instrument	Top Loading Weghing Balance MXX-612	1
ONP	Loop Incinerator	J.P. Selecta	Sterilbio Loop Incinerator (3000788)	1
ONP	Colorimeter	APEL	APEL DIGITAL COLORMETER AP-101	1
ONP	Digital Camera	NIKON	DIGITAL Camera COOLPIX AW100	1
ONP	LED Projector	EPSON	EB-176W H478D	1
ONP	Reference Books	4 books	"Red Book""Nursing Health Assessment""Manual of Clinical Microbiology" "Konemans Atlas and Textbook of Diagnostic Microbiology"	4
ONP	Vortex mixer	Vortex	Heidolph Reax Control	1
ONP	Compressor Nebulizer	OMRON	COM A-I-R	1
ONP	Printer	CANON	Canon Pixma Printer	1
ONP	Digital Thermometer for equipment	SATO	PC-3300	5
ONP	Data Logger	AS ONE	EC800A	2
ONP	Micropipette 20ul	Gilson	Pipeteman 20ul	2
ONP	Micropipette 100ul	Gilson	Pipeteman 100ul	2
ONP	Micropipette 200ul	Gilson	Pipeteman 200ul	2
ONP	Micropipette 1000ul	Gilson	Pipeteman 1000ul	2
ONP	Airconditioner	Panasonic	CW-SC124VPH	2
ONP	Airconditioner	Panasonic	CS-PS12MKQ	1
ONP	Roller Screens for windows			7
RITM (Director)	Reference Books	2 book	"Red Book""Nursing Health Assessment"	2
RITM(Director)	Lap Top PC for RITM staff	TOSHIBA	TOSHIBA Portage R930-3039 40G, SPSSx1、MS Office Home&Student 2010x 1, MS Office Pro2010x1, FileMaker Pro 12,	1
RITM(Co-manager,DEBS)	Lap Top PC for RITM staff	TOSHIBA	TOSHIBA Portage R930-3039 40G, MS Office Pro2010x1, FileMaker Pro 12	1
RITM(Co-manager,Micro)	Lap Top PC for RITM staff	TOSHIBA	TOSHIBA Portage R930-3039 40G, MS Office Home&Student 2010x 1, FileMaker Pro 12,	1

Location	Name of Equipment	Manufacturer	Model	Quantity
RITM(ER)	Pulse Oxymeter	NONIN	Handy Pulse Oxymeter Model: 2500A PalmSAT with Finger Clip Sensor (pediatric) Charger set for PalmSAT (charger stand) 2500C-UNIV	1
RITM(ER)	Blood Pressure Apparatus pediatric	OMRON	Blood Pressure monitor HEM907, Battery Pack HEM907、230H HEM-907 Adaptor	1
RITM(ER)	Digital Thermometer	OMRON	OMRON MC-670	1
RITM(ER)	StateScopes	3M	Littman Stetoscope 'Classic II. Pediatric Stethoscope' 2138 Orage x 2	2
RITM(ER)	Otoscope	Welch Allyn	Diagnostic Otoscope with Insufflator Bulb Model # 20000 x 4 sets 、 Power Handle # 71000-C x4、Hardcase x 4	1
RITM(ER)	Optional part of Pulse Oxymeter	NONIN	PalmSAT 2500B (Rechargable Battery)	1
RITM(MBL 1F)	Genetic Analyzer	Applied BioSystem Inc.	4442019 3500, with DeskTop PC(OPTIPLEX) & AVR(GCM)	1
RITM(MBL 1F)	Agarose Gel Electrophoresis System	Bio Rad, GE Healthcare	SubCell Agarose Gel Electrophoresis System #192, Toray ; 25×25㎝ Gel Caster, GE healthcare 'Power supply EP5301	1
RITM(MBL 1F)	Centrifuge (with swing & plate rotors)	Eppendorf	5804	1
RITM(MBL 1F)	Gel Imaging System	UVP	DigiDoc It with Desk Top PC(ORION) & Printer(canon) w. software	1
RITM(MBL 2F)	Realtime PCR System	Applied BioSystem Inc.	Step One Plus4376598(mian unit), 4366932, 4311971,with LapTop(Dell Latitude E6510)	1
RITM(MBL 2F)	Freezer (medical)	SANYO	MDF-U537D with AVR (Stavol 2KVA)	1
RITM(MBL 2F)	PCR	Takara	Thermal Cycler Dice Gradient TP-600 ×1	1
RITM(MBL 2F)	Spin-column Auto Sample Prep System	QIAGEN	QUIACUBE 9001293, with AVR(GCM)	1
RITM(MBL 2F)	PCR	TAKARA	PCR Thermal Cycler Dice Gradient TP-600	1
RITM(MBL 2F)	Water Purifier	Barnstead	Easypure Rodi System, Start-Up kit, Cartridge Kit, Wall-Mounting Bracket, External Booster Pump Rodi, Pre-Filtration Accessory, Liquid-Sense Controller, Liquid-Detector Pad	1
RITM(MBL 2F)	Micropipette 20ul	Gilson	Pipeteman 20ul	1
RITM(MBL 2F)	Micropipette 200ul	Gilson	Pipeteman 200ul	1
RITM(Microbiology)	Mobile Phone	Nokia	101 RM769	1
RITM(Microbiology)	Freeze Dryer	Yamato	DC401	1
RITM(Microbiology)	Bio Safety Cabinet	ESCO	SC2-4A3 with AVR(Cimtronix 9411)	1
RITM(Microbiology)	Autoclave	Daihan Labtech	LAC-5041P	1
RITM(Microbiology)	Autoclave	Daihan Labtech	LAC-5041P	1
RITM(Microbiology)	Refrigerator	SANYO	SR-D49T (322lt)	1
RITM(Microbiology)	Water Purifier	Barnstead	Easypure RoDi System (CP 99249-00)	1
RITM(Microbiology)	CO2 Incubator	Esco	Celculture Incubator CCL-170A-8	1
RITM(Microbiology)	Upright Microscope	Olympus	CX-41-72CO2	1
RITM(microbiology)	Colorimeter	APEL	APEL DIGITAL COLORMETER AP-101	1

Location	Name of Equipment	Manufacturer	Model	Quantity
RITM(Microbiology)	Reference Book	2 books	"Methods for Antimicrobial Dilution & Disk Susceptibility Testing of infrequently Isolated or Fastidious Bacteria""Manual of Clinical Microbiology"	2
RITM(Microbiology)	Pipet Aid	BD Falcon	™ Express™ Pipet-Aid™ 357590, with stand & charging adaptor	1
RITM(Microbiology)	Micropipette 1000ul	Gilson	Pipeteman 1000ul	1
RITM(Microbiology)	Pipet Aid	BD Falcon	™ Express™ Pipet-Aid™ 357590, w stand & charging adptor	1
RITM(P3)	LapTop PC	HP	HP Pavilion DV6-6157TX	1
RITM(P3)	Mobile Phone	Nokia	101 RM769	1
RITM(P3)	Microplate Reader	Tristar2, Berhold Technologies	LB 942 Multimode Microplate Reader	1
RITM(P3)	Bio Safety Cabinet	ESCO	SC2-4A3 with AVR(Cimtronix 9411)	1
RITM(P3)	Autoclave	Daihan Labtech	LAC-5041P	2
RITM(P3)	Cool Box	Coleman	6278-7036 2801	1
RITM(P3)	Water Purifier	Thermo Scientific	Easypure RoDi System 7128	1
RITM(P3)	Microplate Washer	Bio-Rad	ImmunoWash Model 1575	1
RITM(P3)	CO2 Incubator	Esco	Celculture Incubator CCL-170A-8 with UPS (Powercom)	1
RITM(P3)	Deep Freezer (low temparature)	Panasonic	MDF-U33V-PK with AVR(Stavol 3KVA)	2
RITM(P3)	Upright Microscope	Olympus	CX-41-72CO2	1
RITM(P3)	Inverted Microscope set	Olympus	IX71-F22FL/PH w Camera (DP72), Laptop HP Elitebook 8460p	1
RITM(P3)	Inverted Microscope	OLYMPUS	Inverted Microscope CKX41N-31PHP ×1 with Camera Adaptor U-TV1X-2 ×1、 C mount Camera Adaptor U-CMAD3 ×1	1
RITM(P3)	Rack for Freezer		Inventory rack for MDF-U33V×6、Inventory rack for MDF-U33V×6	12
RITM(P3)	Pharmaceutical Refrigirater	Panasonic	MPR-414F-P K with AVR(Stavol SVC-2kVA)	1
RITM(P3)	Biological Safety Cabinet	ESCO	Biological Safety Cabinet LA2 3FT A220-240VAC 60HZ ×1	1
RITM(P3)	Micropipette 20ul	Gilson	Pipeteman 20ul	1
RITM(P3)	Pipet Aid	Dramond	Pipet-Aid XP, 110V charger	3
RITM(P3)	UPS	Powercom	Black Knight series2000VA	1
RITM(MBL Freezer House)	Deep Freezer (low temparature)	Panasonic	MDF-U33V-PK with AVR(Stavol 3KVA)	1
RITM(Microbiology Freezer House)	Deep Freezer (low temparature)	Panasonic	MDF-U33V-PK with AVR(Stavol 3KVA)	2
RITM(Microbiology Freezer House)	Freezer (medical)	SANYO	MDF-U537D with AVR (Stavol 2KVA)	1
RITM(Virology)	Liquid Nitrogen Tank and Accessories	CP/Taylor-Wharton	cp-03773-61	2
BFO	LapTop PC	HP	HP Pavilion DV6-6157TX	1
BFO	Printer/Scanner/Copier	canon	ICMF4570DN	4

Location	Name of Equipment	Manufacturer	Model	Quantity
BFO	DeskTop Computer	Dell	XPS 8300	4
BFO	Mobile Phone	Sony Ericson	Xperia Mini ST15i	5
BFO	GPS	Garmin	Garmin novi 1410	1
BFO	Refrigerator	SANYO	SR-D49T (322lt)	2
BFO	Printer	BROTHER	MFC74700 5-IN-1 MONO LASER	1
BFO	Weghing Scale	TANITA	Small Scale, Pearl White HD-386-PR x 11	11
BFO	Tablet PC	Apple	iPad2Wifi 16GB BLK、iPad2Wifi 16GB WHT、i-Pad case(pink)	10
BFO	Walkie-Talkie	Motorola	with charge unit	6
BFO	Printer	CANON	IP 2770	1
BFO	LapTop PC	Lenovo	Ideapad	1
BFO	UPS	Panther	PUP500	1
BFO	UPS	Panther	PUP501	1
BFO	UPS	APC	Back/UPS ES-500	1
BFO	UPS	APC	Back/UPS E5-501	1
BFO	Airconitioner (window type)	WhiteWestinghouse	Window Type	3
BFO	Airconitioner (SplitType)	Samsung	ASV-12ESLN	1
BFO	Projector	Toshiba	NPS10A	1
BFO	Projector Screen Tripod	Meki		1
BFO	Steel Cabinet Vertical (2 drawer)	CLC Marketing		1
BFO	Water Heater	AEG	BS60E	1
BFO	Biometric Time & Attendance System	David Link	DL-F88	1
BFO	Emergency Light	OMNI	AEL 9032/12V	1
BFO	Wifi Router	Cisco	Linksys E1200	1
BFO	Fiemaker Pro Ver 12. License	FileMaker	ENG, Version 12	2
BFO	Airconditioner (Floor Stand Type)	KOPPEL	KFM-36EOA/KPC-361HOA	1
RITM(office)	Mobile Phone	Xperia Mini ST15i	Sony Ericson	10
RITM(office)	GPS	Garmin novi 1410	Garmin	1
RITM(office)	LapTop PC	HP Pavilion DV6-6157TX	HP	3
RITM(office)	Software (FileMaker)	Filemaker Pro11 Japanese Convertible version	FileMaker	1
RITM(office)	Software (FileMaker)	F ilemaker Pro11 DVD-ROM(P-1-F31D128) B0039OL576	FileMaker	1
RITM(office)	Monitor 24inch	E2437FH 24" LED MONITOR	ACC	1
RITM(office)	Monitor 24inch	E2437FH 24" LED MONITOR	ACC	1
RITM(office)	Printer	HL4570CDW COLOUR LASER	BROTHER	1

Location	Name of Equipment	Manufacturer	Model	Quantity
RITM(office)	Pulse Oxymeter	Handy Pulse Oxymeter Model: 2500 A PalmSAT with Finger Clip Sensor (pediatric) Charger set for PalmSAT (charger stand) 2500C-UNIV	NONIN	1
RITM(office)	StateScopes	Littman Stetoscope 'Classic II. Pediatric Stethoscope' 2138 Royal Blue x 2	3M	2
RITM(office)	Colorimeter	APEL DIGITAL COLORMETER AP-101	APEL	1
RITM(office)	Software for PC	Filemaker Pro11Japanese Version× 1	FileMaker	1
RITM(office)	Digital Camera	DIGITAL Camera COOLPIX AW100	NIKON	7
RITM(office)	Weghing Scale	Small Scale, Pearl White HD-386-PR x 11	TANITA	1
RITM(office)	Optional part of Pulse Oxymeter	2500C-UNIV. Power Supply	NONIN	1
RITM(office)	LED Projector	EB-176W H478D	EPSON	2
RITM(office)	PC for Server	Monitor:LG Flatron IPS234V-PM, O: MS Server PO#10079149	Assembling Model	1
RITM(office)	Pulse Oxymeter	PalmSAT 2500A (with Alarm) x 10	NONIN	10
RITM(office)	Finger Clip (pediatric) for Pulseoxymeter	Finger Clip (pediatric) for Pulseoxymeter 80000AP-1 x 20	NONIN	20
RITM(office)	Ambubag (pediatric)	BlueCross Emergency #CCRW-22P x 4sets	Bluecross	4
RITM(office)	Intubation Set (adult/infant)	BlueCross Emergency #ACICRW-22P x 4sets	Bluecross	4
RITM(office)	Blade for Optic Laryngoscope (No.00)	Blade for Miller Halogen Fiber Optic Laryngoscope (Size:00 , 36mm) #68065 ×4	Welch Allyn	4
RITM(office)	Blade for Optic Laryngoscope (No.0)	Miller Halogen Fiber Optic Laryngoscope (Size:0 , 53mm) #68060 x 4	Welch Allyn	4
RITM(office)	Blade for Optic Laryngoscope (No.01)	Miller Halogen Fiber Optic Laryngoscope (Size; #01, 80mm 68061) x 4	Welch Allyn	4
RITM(office)	Blade for Optic Laryngoscope (No.02)	Miller Halogen Fiber Optic Laryngoscope (Size; #2 133mm 68062) x 4	Welch Allyn	4
RITM(office)	PenLight Handle for Laryngoscope(slim)	PenLight Handle for Laryngoscope 2.5 V Penlight, uses two AA-size batteries # 60814 x 4	Welch Allyn	4
RITM(office)	Spare Lamps of Laryngoscope	06000-U 2.5V Halogen lamp	Welch Allyn	8
RITM(office)	Digital Thermometer for equipment	PC-3300	SATO	1
RITM(office)	Fiemaker Pro Ver 12. License	ENG, Version 12	FileMaker	1

Annex 6: Project Design Matrix (PDM) version 2 (proposed by the Mid-term Review team)

Annex 6
Date: MM DD, 20YY
Project Duration: 5 years from April 1, 2011

Project Title: The Project for Comprehensive Etiological and Epidemiological Study on Acute Respiratory Infections in Children: Providing Evidence for the Prevention and Control of Childhood Pneumonia in the Philippines

Target Area: Republic of the Philippines

Target Group :

Direct Beneficiaries: Approximately XX researchers at the Research Institute for Tropical Medicine (RITM), the Department of Health
Indirect Beneficiaries: Approximately YY children under 5 years old

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions
Overall Objective Mortality due to childhood pneumonia is reduced.			
Project Purpose Etiology, disease burden and risk factors of childhood pneumonia are defined and effective interventions to reduce mortality due to pneumonia in children are validated.	1. New scientific findings related to prevention and control of childhood pneumonia are published in more than XX peer-reviewed internationally recognized scientific journals by the end of the peroject period. 2. Discussions with regard to the utilization of intervention pachage and/or policy advocacy for reducing child mortality due to pneumonia are started with relevant organizations such as the DOH by the time of the Terminal Evaluation.	1. Occasional reports, publication in peer-reviewed journals 2. Meeting minutes of discussions with the DOH and/or other relevant parties	

Outputs			
1 Etiology of childhood pneumonia and respiratory infections in the selected sites is determined.	1-1.By MM YYYY, the composition of identified bacterial and viral pathogens detected at sentinel sites. 1-2.By MM YYYY, the correlation of identified pathogens and severe pneumonia detected at sentinel sites.	1-1. Project reports 1-2. Publication in peer-reviewed journals	Childhood pneumonia remains a major public health problem in the country.
2 Disease burden due to childhood pneumonia is measured in the selected sites.	2-1.By MM YYYY, cohort study with sufficient statistical power is commenced for measuring of severe disease and deaths due to childhood pneumonia. 2-2. By MM YYYY, incidences of severe disease and deaths due to childhood pneumonia are determined in at least 2 communities.	2-1 Project Report	
3 Risk factors for severe pneumonia in children are identified.	3-1.By MM YYYY, etiological risk factors for severe pneumonia and deaths are identified. 3-2.By MM YYYY, other factors (e.g. health seeking behavior, knowedge state for infectious diseases, socio-economic backdrops, etc.) are identified through the cohort study.	3-1. Project reports 3-2. Publication in peer-reviewed journals	
4 Interventions to reduce mortality due to childhood pneumonia are evaluated.	4-1. By MM YYYY, contents of intervention, intervention method and evaluation method are determined. 4-2. By MM YYYY, intervention study to the target cohort is commenced. 4-3. By MM YYYY, intervention effects for reducing severe pneumonia and its feasibility are evaluated.	4-1. Project reports 4-2. Publication in peer-reviewed journals	
5 Research outcomes for the reduction of child mortality due to pneumonia are shared with Philippine and internetional relevant organizations	5-1. Progress and research outcomes are regularly shared amongst relevant organizations to the project throughout the project period. 5-2. By MM YYYY, a intervention package (incl. an operational guide, necessary materials and equipment and human resources, cost analysis, etc.) for reducing child mortality due to pneumonia is	5-1. Project reports 5-2. The Intervention Package	

Activities	Inputs		
	Japan	Philippines	
1 Etiology of childhood pneumonia and respiratory infections in the selected sites is determined. 1-1. To establish appropriate laboratory capacity in the selected government hospitals for etiological studies. 1-2. To strengthen RITM capacity to detect, identify and analyze etiological agents of childhood pneumonia. 1-3. To establish sentinel sites in the selected primary health facilities for etiological studies. 1-4. To collect and test samples for bacteriological and viral pathogens from children with pneumonia and other respiratory infections. 1-5. To monitor the sample collection and testing at the sentinel sites.	1. Dispatch of experts (1) Chief Adviser (2) Project Coordinator (3) Virology (4) Public Health (5) Bacteriology (6) Epidemiology 2. Equipment Equipment, reagent and supplies necessary for research activities in the project 3. Training of counterparts in Japan: Hands-on training on laboratory and epidemiology	1 Assignment of personnel (1) Members of researchers' group (2) Administrative staff 2 Provision of office space 3 Utility charges 4 Cost-sharing for travel expenses for monitoring	Support from hospitals and local governments is obtained
2 Disease burden due to childhood pneumonia is measured in the selected sites. 2-1. To establish a methodology to measure the incidence of pneumonia and pneumonia-associated deaths. 2-2. To analyze the data to measure the incidence of pneumonia and pneumonia-associated deaths.			
3 Risk factors for severe pneumonia in children are identified. 3-1. To establish and maintain an integrated database. 3-2. To identify risk factors using the data from etiology and disease burden studies.			

4 Interventions to reduce mortality due to childhood pneumonia are evaluated. 4-1. To develop methods for intervention studies to reduce mortality due to childhood pneumonia based on the results of the studies on etiology, disease burden and risk factors. 4-2. To work with national and local stakeholders to review current strategies on childhood pneumonia. 4-3. To conduct intervention studies in the selected communities. 4-4. To work with national and local stakeholders to evaluate new strategies to decrease burden of childhood pneumonia.			
5 Research outcomes for the reduction of child mortality due to pneumonia are shared with Philippine and internetional relevant organizations 5-1. To conduct meetings/workshops to disseminate the study results. 5-2. To disseminate the study results through international conferences and scientific journals. 5-3. To provide the Depatment of Health (DOH) National ARI Control Program with the findings and recommendations for policy formulation.			
			Pre-Condition 1. Research approvals are obtained from RITM. Tohoku University, EVRMC, ONP, BPH, and CHDs before starting respective research studies. 2. Local chief executives are informed of the Project. 3. Project is endorsed by chief of hospitals.


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